Proj. No.: RA 140			Employer:		Request No.
DESIGN, BUILD, COMPLETE A	ND MAINTAI	N		Cia	
SHEIKH JABER AL-AHMAD AL CAUSEWAY PROJECT (MAIN L			STATE OF KUWAIT MINISTRY OF PUBLIC WORKS	diot all the distriction of the second	RA140-22-DDR-SBY-G C-0001-01
Engineer's Representa	ative:		Contractor:		Date
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TYLININTERNA	HONAL				100
		Transr	mittal of Design Drawing		RECEIVED
1. Subject Description		etailed Des	sign - Subiyah Interchange E	Bridge 15	FEB 2016
			ibstructure of IC Bridge	To a	TISC TO
99,300				5	SAL TOOLER
2. Submittal Details					
Item Reference	Rev.		Description		Copies
RA140-22-BRG-CW-DW-42200	A2	Detailed [	Design - Subiyah Interchange I IC Bridge	Bridge - Substru	ucture of 2
C. C			"Attached Comment & Resp	onse Sheet"	18 9 10
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		A.3.52	OVER-MENT SAMESTIC	M2	E FED
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☐ Your information		Approva	Checking	□ Re	eview and Congrept
We certify that the above of Submitted by :Chan So			esigned by Systra and consen	Hed by AECOM	SURE
3. Engineer's Approva					
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D.C.	-115.1	**   1			12 91-75 (70-7)
- Refer to	our con	iments-c	on the attached comme	ents and res	ponse sheets.
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マールシー	Approve	ed as noted	Revise and res	ubmit	Rejected
13/2/2016					
Engineer Engineer	's Signatı	ire:	2	Date \	41212016
		-			
Approval shall not relieve Contractor of RA140-22-DDR-SBY-GEN-C-000	t his liabilities u	nder the Contrac	ct or constitute authorization of any change	to Contract Documen	its.
{A740-22-1313H*XHY=C=HX=C=HX	7-117				

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Comment & Response Sheet Document No: RA140-22-BRG-CW-DW-42200-A2

Ref. Transmittal No : RA140-22-DDR-SBY-GEN-C-0001-01 Ref. Report No & DWG package No : RA140-22-BRG-CW-DW-42200-A2

Document title : Detailed Design - Subiyah Interchange Bridge Substructure of IC Bridge

Comments Issued by & date : GF - 21 December 2015 & 11 February 2016

Answer Issued by & date :

Consent Classification : A

(A: Consented to, authorized to proceed / B: Consented to, subjected to comments / C: Revise & Resubmit, incorporate comments

W: Rejected, not consented to, reason Noted)

No.	Rev.	Reference	e Comment rev. <sup>2</sup>	Comment	Response	Cat.1	Status <sup>3</sup>
				RA140-22-BRG-CW-DW-42200-A2			
1	A2	General	1 st	The received ICE check report under submittal RA140-22-DDR-SBY-GEN-C-0001-00 Detailed Design - Subiyah Interchange Bridge Substructure of IC Bridge, contains only the check of the superstructure elements, and ICE didn't provide the check/consent of the foundation elements. As such, this submittal is rejected till receiving the ICE check/consent on the foundation/substructure elements. Refer to DAR comments on submittal RA140-22-DOC-SBY-GEN-C-0001-00.	Please find attached the revised ICE Report with consent for substructure and superstructure.	2	
			2 <sup>nd</sup>	Noted.			AA

1) Category : Cat 0 = Observation / Note, Cat 1 = Information Required Only, Cat 2 = Major Comment / Revision Required

2) Comment Rev.: 1st comment, 2nd comment...

3) Comment Status after response: AA = Resolved, implemented and closed, BB = Resolved - not yet implemented, CC = Unresolved





#### Comment & Response Sheet Document No: RA140-22-BRG-CW-DW-42200-A2-DR2/C

Ref. Transmittal No : RA140-22-DDR-SBY-GEN-C-0001-00 (Rev. 00); RA140-22-DDR-SBY-GEN-C-0001-01 (Rev. 01);

Ref. Report No & DWG package No : RA140-22-BRG-CW-DW-42200-A2

Document title : Subiyah Interchange bridge – Substructure of IC bridge

Comments Issued by & date : T.Y. Lin International (Li) on 11 February, 2016

Answer Issued by & date :

Consent Classification : A (A: Consented to, authorized to proceed / B: Consented to, subjected to comments / C: Revise & Resubmit, incorporate comments

W: Rejected, not consented to, reason Noted)

No.	Rev.	Refere	ence	Comment rev. <sup>2</sup>	Comment	Response		Status <sup>3</sup>
1	A2	General		1 <sup>st</sup> comment	Subject to possible design revision based on comments on seismic analysis.	There will be no change in drawings based on seismic analysis.		
				2 <sup>nd</sup> comment	noted			AA



<sup>1)</sup> Category : Cat A = Agreed with response, Cat 0 = Observation / Note, Cat 1= Information Required Only, Cat 2= Major Comment / Revision Required

<sup>2)</sup> Comment Rev.: 1<sup>st</sup> comment, 2<sup>nd</sup> comment...

<sup>3)</sup> Comment Status after response: AA = Resolved, implemented and closed, BB = Resolved – not yet implemented, CC = Unresolved
Page 1 of 1

				SYSTRA – QUALITY CONTROL & QUALITY ASSURANCE C	HECKLIST							
ce		RA140-0	QFM-06039-2015-12-08-HSH									
	42K		SUBIYAH INTERCHANGE BRIDGE									
:	42K		SUBIYAH INTERCHANGE BRIDGE			Required	Action by ER	1				
	Document reference	Revision	Title 1	Title 2	Title 3	For Review	For Information	Basic Design Comments Integrated	Detailed Design Comments Integrated	ICE Comment Sheets Included	ICE Reports Include	ied
	RA140-22-BRG-CW-DW-42200	A2	SUBIYAH INTERCHANGE BRIDGE	Substructure of IC bridge		</td <td></td> <td><b>√</b>)</td> <td></td> <td><b>√</b>)</td> <td><b>√</b></td> <td>_</td>		<b>√</b> )		<b>√</b> )	<b>√</b>	_
П	RA140-22-BRG-CW-TR-42811	A1	SUBIYAH INTERCHANGE BRIDGE	SUBSTRUCTURE DESIGN		√		<b>√</b>		N/A	N/A	
						<del></del>						_
				Drawings and reports/calculations have been compared and are consistent	√		D	ATE		08/12/2015		
				Drawings filled properly	√							
			Drawings checked for technical adequacy, legibility, mathematical and drafting accuracy	√								
	Systra hereby certifies	that this submiss	sion fulfil Systra quality control requirements and procedures :	Drawings are in agreement with other disciplines	√		N/	ME		Hyun-Seok Hong		
				Conformance with Design Basis and applicable design specification	√							
				Revisions have been clouded	√					Zd.		
				Drawings were properly checked using color codes (Red, Green, Yellow).	√		SIGN	ATURE		11/5		
				Dimensions and units correct and consistent   √		I						

REMARKS

HDEC & CGCC - Qualit	y Control and Assurance	Checklist for RA140 Project
----------------------	-------------------------	-----------------------------

HDEC & CGCC certifies that this submission is properly reviewed by quality control process

SYSTRA QFM are properly filled

Consistency of the drawings and reports

Composition of the document and typographical error are properly reviewed

Drawing list and revision are properly checked

			Related Document		NAME OF TAXABLE PARTY.
	Document No.	Rev.	Title	Transmittal No.	Submission Date
	RA140-22-BRG-CW-DW-422D0	A2	Subiyah Interchange bridge – Substructure of IC bridge	RA140-22-DDR-S8Y-GEN-C-0001-00	9/12/2015
Completeness of the western					
Completeness of the package			19000		

REMARKS			

Date	Name	Signature
9/12/2015	Adel Salman	3/12

Submission Ref. No.	RA140-TRS-1680	Title: Subiyah Interchange Bridge Substructure & Superstructure - (RA140-22-BRG-CW-DW-42200-A2 & RA140-22-BRG-CW-DW-42400-A2)
Response Ref. No.	EKHC:AKML:60290056/8.2-2015010904T	KA140-22-BRG-CW-DW-42400-A2)
Insufficient	comment inciple with minor Comments Information to proceed with Review conformity found	
Remarks:		
For detail pleas	e refer to the attached ICE comment table.	
Exclusion:		
All construction and etc are all e	n information such as bar bending schedules, excluded in the review.	taking off information, locations of couplers/lapping
F AECO14		
From: AECOM		10

The Design, Build, Completion and Maintain

Sheikh Jaber Al-Ahmad Al-Sabah Causeway Project (Main Link)
Contract No. RA140

## **Kuwait**

**ICE Check Report for Detailed Design Stage** 

TRS-1680 Subiyah Interchange Bridge Substructure- Superstructure











## Contents

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### **Appendices**

Appendix A List of Non-conformance

Appendix B Approach for Checking





#### 1. List of Documents Checked

	Transmittal Number/Document No.	Title
Design Package	TRS-1680	Subiyah Interchange Bridge
Drawings Package	RA140-22-BRG-CW-DW-42200-A2	Subiyah Interchange Bridge – Substructure
Drawings Package	RA140-22-BRG-CW-DW-42400-A2	Subiyah Interchange Bridge - Superstructure

### 2. Contract Documents used in the Checking

- a) Document III.1: General Specifications
  - MPW, Roads Administration: General Specifications for Kuwait Motorway/Expressway System, August 2004 and amendments until Tender closing date.
  - AASHTO LFRD Bridge Construction Specifications, 2<sup>nd</sup> Edition 2004, including 2009 Interim Revisions
  - General Specifications for Buildings and Engineering Works for Ministry of Public Works year 1990 and amendments until Tender closing date.
- b) Document III.2: Particular Specifications Revision 2M
- c) Document III.3: Design Criteria Revision 2M
- d) Geotechnical Factual Report: Soil Investigation for Subiyah Interchange

## 3. Frozen Scheme Reference in Basic Design Stage

Package/Document No.	Package / Document Title
RA140-22-BRG-CW-DW-42200-A2	Subiyah Interchange Bridge – Substructure
RA140-22-BRG-CW-DW-42400-A2	Subiyah Interchange Bridge - Superstructure
RA140-10-BRG-CW-TR-00814-B3	Design Basis-Bridge
RA140-10-BRG-CW-TR-00807-A5	Durability Study Plan
RA140-10-BRG-CW-TR-00808-B1	Durability Study

### 4. Standards and Codes of Practice used in the Checking

AASHTO LRFD Design Specifications SI Units 4<sup>th</sup> Edition 2007

#### 5. List of Non-Conformance Findings

See Appendix A

## 6. Computer Analysis of Structure

Structure	Prestressed concrete box girder bridge
Name of Computer Program	Midas
Version	2015
Methodology	Analysis and checking
Basic Input Parameters	Concrete C40 and C50
Assumptions	Elastic linear





### 7. Approaches for Checking

A global 3-D frame model of Subiyah Interchange Bridge has been built using MIDAS CIVIL 2015, which is comprised of the following structural elements:

- Pre-stressed concrete I beams
- Abutment
- Bearings

The structural analysis of the bridge performed by MIDAS CIVIL 2015 are listed as followed, all of them are set in accordance with the design basis and the planned construction schemes.

- Static analysis
- Construction stage analysis
- Response spectrum analysis

The loadings are applied according to Design Basis: Bridges (Report No.: RA140-10-BRG-CW-TR-00814-B3) and AASHTO LRFD Design Specifications SI Units 4<sup>th</sup> Edition 2007.

For details, please kindly refer to the attached Appendix B.





## Appendix A List of Non-conformance Findings

## **ICE Check Report – List of Comments or Non-conformances**

Document No :

RA140-22-BRG-CW-DW-42200-A2-ICE1IC RA140-22-BRG-CW-DW-42400-A2-ICE1IC

Ref.Transmittal No : TRS-1680

Ref. Report No & DWG package No : RA140-22-BRG-CW-DW-42200-A2 & RA140-22-BRG-CW-DW-42400-A2

Document title : Subiyah Interchange Bridge Substructure & Superstructure

Comments Issued by & date : by Dr. Yu, GuoXiong on 7<sup>th</sup> December 2015

Answer Issued by & date

Consent Classification : A (A: No adverse comments / B: Agree in Principle with minor comments / C: Insufficient Information to proceed with review / W: Major Non-conformity found, revision required)

No	Rev.	Reference	Comment rev.	Comment or Non-Conformance	Response	Cat.1
				Exclusion: All construction information such as bar bending schedules, taking off information, locations of couplers/lapping and etc are all excluded in the review.		
1	A2		1 <sup>st</sup>	As shown by the checking report, no comment.		А

<sup>2)</sup>Comment Rev. : 1<sup>st</sup> comment, 2<sup>nd</sup> comment ...





## Appendix B Approach for Checking

# Report on independent checking of superstructure in Subiyah Interchange Bridge IC Bridge Longitudinal direction

### 1. Scope of the report

The purpose of this report is to present the independent checking of the superstructure in longitudinal direction for the Subiyah Interchange Bridge IC Bridge of Sheikh Jaber Al-Ahmad Al-Sabah Causeway Project.

#### 2. General Characteristics

### 2.1 Design documents

The checking is based on the following design documents and design codes:

RA140-22-BRG-CW-DW-42400-A2

Subiyah Interchange Bridge – Superstructure of IC Bridge

AASHTO LRFD Bridge Design Specifications SI Units 4<sup>th</sup> Edition 2007.

### 2.2 Description of Subiyah Bridge

Please refer to the substructure checking report of this bridge.

#### 2.3 Materials

#### 2.3.1 Concrete characteristics

Please refer to the substructure checking report of this bridge.

#### 2.3.2 Prestressing steel characteristics

Please refer to the substructure checking report of this bridge.

#### 2.3.3 Reinforcing steel characteristics

Please refer to the substructure checking report of this bridge.

#### 2.3.4 Elastomeric bearing

Please refer to the substructure checking report of this bridge.

#### 2.4 Software

Please refer to the substructure checking report of this bridge.

#### 3. Modelling

Please refer to the substructure checking report of this bridge.

#### 3.1 Nodal coordinates of substructures

Please refer to the substructure checking report of this bridge.

### 3.2 Bearing stiffness

Please refer to the substructure checking report of this bridge.

#### 3.3 Soil spring

Please refer to the substructure checking report of this bridge.

#### 3.4 P-delta effect

Please refer to the substructure checking report of this bridge.

### 3.5 Construction stages, creep and shrinkage

Please refer to the substructure checking report of this bridge.

## 4. Special issues for superstructure modeling

#### 4.1 Loads and Load Combinations

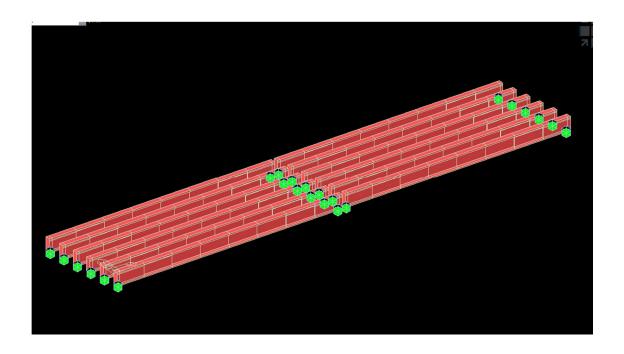
Ship impact load

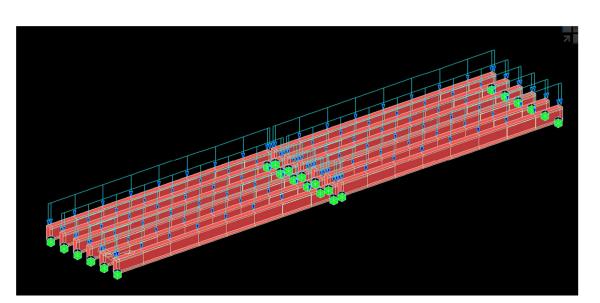
According to desing basis for bridge (verstion B5), 5.14.2, the superstructure shall be able to resist a point load of 2MN on 1m2 perpendicular to the face of structure.

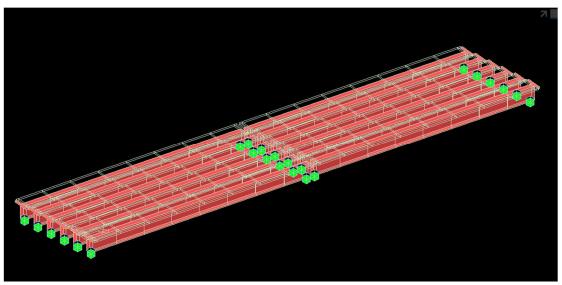
For the loads other than ship impact load on the superstructure, please refer to the substructure checking report of this bridge.

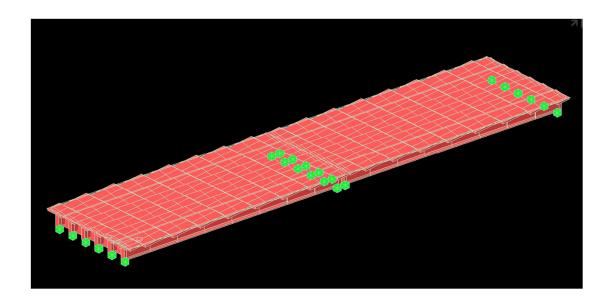
## 4.3 Modeling

The figures below show the analytical model and construction steps.









## 5. loads combination and checking criterion

## 5.1 In service

SLS

	DC	SIDL	LL	WS (win d on str.)	WL (win d on live load)	TU	CR/S H	TG	PR (pres tressi ng force )	SE	
SLS I -b	1	1	1	0.3	0.3	1	1	0.5	1	1	Compressive stress checking
SLS III	1	1	0.8	-	-	1	1	0.5	1	1	Tensile stress checking
SLS VI	0.5	0.5	1	-	-	-	-	0.5	-	-	Compressive stress checking

Compressive stress checking criterion

Compressive stress limit after loasses (AASHTO 2007)

Table 5.9.4.2.1-1 Compressive Stress Limits in Prestressed Concrete at Service Limit State After Losses, Fully Prestressed Components.

Location	Stress Limit
<ul> <li>In other than segmentally constructed bridges due to the sum of effective prestress and permanent loads</li> </ul>	$0.45 f_c'  (MPa)$
<ul> <li>In segmentally constructed bridges due to the sum of effective prestress and permanent loads</li> </ul>	0.45 f' <sub>c</sub> (MPa)
<ul> <li>In other than segmentally constructed bridges due to live load and one-half the sum of effective prestress and permanent loads</li> </ul>	$0.40 f_c'$ (MPa)
<ul> <li>Due to the sum of effective prestress, permanent loads, and transient loads and during shipping and handling</li> </ul>	$0.60  \phi_w f_c'  (MPa)$

So,

The limit for compressive stresses can be summarized by the table below.

	Load case	Equation	f'c (MPa)	ф	Normal load stress limit	Overload stress limit
	Dead Load	0.45f'c	50	-	22.5	24.75
SLS I	Dead Load + live load	0.60∲f'c	50	1	30.0	33.0
SLS VI	Dead load + live load	0.40f'c	50	-	20.0	22.0

Tensile stress checking criterion

Tensile stress limit after loasses (AASHTO 2007)

Table 5.9.4.2.2-1 Tensile Stress Limits in Prestressed Concrete at Service Limit State After Losses, Fully Prestressed Components.

Bridge Type	Location	Stress Limit
Other Than Segmentally Constructed Bridges	Tension in the Precompressed Tensile Zone Bridges, Assuming Uncracked Sections	
	For components with bonded prestressing tendons or reinforcement that are subjected to not worse than moderate corrosion conditions	0.50√f' <sub>c</sub> (MPa)
	For components with bonded prestressing tendons or reinforcement that are subjected to severe corrosive conditions	0.25√f' <sub>c</sub> (MPa)
	For components with unbonded prestressing tendons	No tension
Segmentally Constructed Bridges	Longitudinal Stresses Through Joints in the Precompressed Tensile Zone	
	<ul> <li>Joints with minimum bonded auxiliary reinforcement through the joints sufficient to carry the calculated longitudinal tensile force at a stress of 0.5 f<sub>y</sub>; internal tendons or external tendons</li> </ul>	0.25∜f′ <sub>c</sub> (MPa)
	Joints without the minimum bonded auxiliary reinforcement through joints	No tension
	Transverse Stresses Through Joints	
	Tension in the transverse direction in precompressed tensile zone	0.25√f' <sub>c</sub> (MPa)
	Stresses in Other Areas	
	For areas without bonded reinforcement	No tension
	<ul> <li>In areas with bonded reinforcement sufficient to resist the tensile force in the concrete computed assuming an uncracked section, where reinforcement is proportioned using a stress of</li> </ul>	
	$0.5 f_y$ , not to exceed 205 MPa.	$0.50\sqrt{f_c'}$ (MPa)
	Principal Tensile Stress at Neutral Axis in Web	0.289√f' <sub>c</sub> (MPa)
	<ul> <li>All types of segmental concrete bridges with internal and/or external tendons, unless the Owner imposes other criteria for critical structures.</li> </ul>	

So the tensile stress limits are:

For location of no-joint.

	fc'	
	50.00	
0.25sqrt(fc')	1.77	other load
0.5sqrt(fc')	3.54	overload

For location of joint, Tensile stress is not allowed.

5.2 ULS Load combination

	DC	SIDL	LL	WS (win d on str.)	WL (win d on live load)	TU	CR/S H	TG	PR (seco ndar y prest ressi ng force )	SE	
ULS -I	1.25	1.5	1.75	-	-	0.5	1	0.5	1	1	Live load
ULS – II	1.25	1.5	1.35			0.5	1	0.5	1	1	Military live load
ULS – IIIb	1.25	1.5		1.4	-	0.5	1	1	1	1	High winds
ULS – IV	1.5	1.5	-	-	-	0.5	1	-	1	-	High dead load
ULS – V	1.25	1.5	1.35	0.4	0.4	0.5	1	0.5	1	1	

## Extreme Limit State

	DC	SIDL	LL	WS	WL	TU	CR/S	TG	PR	SE	
				(win	(win		Н		(pres		
				d on	d on				tress		
				str.)	live				ing		
					load)				force		
									)		
Ext -I	1	1	0.5	-	1	-	1	-	1	1	Seismic
Ext- II	1.25	1.5	0.5	-	-	-	1	-	1	-	Ship Impact

Checking criterion

#### 5.7.3.2 Flexural Resistance

#### 5.7.3.2.1 Factored Flexural Resistance

The factored resistance  $M_r$  shall be taken as:

$$M_r = \phi M_n$$
 (5.7.3.2.1-1)

where:

 $M_n$  = nominal resistance (N-mm)

φ = resistance factor as specified in Article 5.5.4.2

#### 5.7.3.2.2 Flanged Sections

For flanged sections subjected to flexure about one axis and for biaxial flexure with axial load as specified in Article 5.7.4.5, where the approximate stress distribution specified in Article 5.7.2.2 is used and where the compression flange depth is less than  $a = \beta_1 c$ , as determined in accordance with Eqs. 5.7.3.1.1-3, 5.7.3.1.1-4, 5.7.3.1.2-3, or 5.7.3.1.2-4, the nominal flexural resistance may be taken as:

$$M_{s} = A_{p_{s}} f_{p_{s}} \left( d_{p_{s}} - \frac{a}{2} \right) + A_{s} f_{s} \left( d_{s} - \frac{a}{2} \right) - A_{s}' f_{s}' \left( d_{s}' - \frac{a}{2} \right) + 0.85 f_{s}' \left( b - b_{s}' \right) h_{f} \left( \frac{a}{2} - \frac{h_{f}}{2} \right)$$
(5.7.3.2.2-1)

where:

 $A_{ps}$  = area of prestressing steel (mm<sup>2</sup>)

 $f_{ps}$  = average stress in prestressing steel at nominal bending resistance specified in Eq. 5.7.3.1.1-1 (MPa)

d<sub>p</sub> = distance from extreme compression fiber to the centroid of prestressing tendons (mm)

 $A_y$  = area of nonprestressed tension reinforcement (mm<sup>2</sup>)

f<sub>r</sub> = stress in the mild steel tension reinforcement at nominal flexural resistence (MPa), as specified in Article 5.7.2.1

d<sub>s</sub> = distance from extreme compression fiber to the centroid of nonprestressed tensile reinforcement (mm)

 $A'_s$  = area of compression reinforcement (mm<sup>2</sup>)

f'<sub>s</sub> = stress in the mild steel compression reinforcement at nominal flexural resistance (MPa), as specified in Article 5.7.2.1

 d's = distance from extreme compression fiber to the centroid of compression reinforcement (mm)

f'c = specified compressive strength of concrete at 28 days, unless another age is specified (MPa)

b = width of the compression face of the member (mm)

b<sub>w</sub> = web width or diameter of a circular section (mm)

 $\beta_1$  = stress block factor specified in Article 5.7.2.2

h<sub>f</sub> = compression flange depth of an I or T member (mm)

 $a = c\beta_1$ ; depth of the equivalent stress block (mm)

Resistance factors are shown below:

•  $\phi = 1.00$  for flexure and tension of prestressed concrete

•  $\phi = 0.90$  for shear and torsion

•  $\phi = 0.80$  for compression in anchorage zones

•  $\phi = 1.00$  for tension in steel in anchorage zones

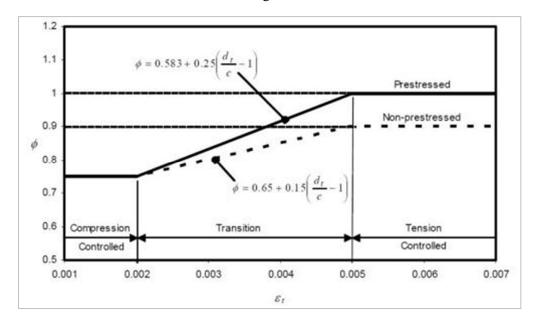


Figure 1: Variation of  $\Phi$  with net tensile strain  $\epsilon t$  and d/c for Grade 420 reinforcement and for prestressing steel

For structural verification in EXT,

Resistance factor:

 $\phi = (0.55^1/2) = 0.742$ 

#### 5.3 In Construction

	DC	SIDL	CL (cons tructi on load)	WS (win d on str.)	WL (win d on live load)	TU	CR/S H	TG	PR (pres tressi ng force	SE	
									)		
SLS	1	1	1	-	-	1	1	0.5	1	1	
ULS-I	1.25	1.25	1.5	-	-	1	1	0.5	1	1	

For SLS,

compression stress limit according to table 5.9.4.2.2-1

Upper flange, 0.6\*50 = 30 (N/mm2)

Lower flange, 0.6\*50= 30 (N/mm2)

Table 5.14.2.3.3-1 Load Factors and Tensile Stress Limits for Construction Load Combinations.

		LOAD FACTORS													STRESS LIMITS					
Load		Dead Load	d	Live Load		Wind Load				Oth	er Loads			Earth Loads	Flexural	Tension	Principal Tension			
Comb	DC	DIFF	U	CLL	IE	CLE	ws	WUP	WE	CR	SH	TU	TG	WA	EH EV ES	Excluding "Other Loads"	Including "Other Loads"	Excluding "Other Loads"	Including "Other Loads"	See Note
а	1.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	Υrc	1.0	1.0	$0.50\sqrt{f_c'}$	$0.58\sqrt{f_c'}$	$0.289 \sqrt{f_c'}$	$0.331\sqrt{f_{c}'}$	-
b	1.0	0.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	770	1.0	1.0	$0.50\sqrt{f_c'}$	$0.58\sqrt{f_c'}$	$0.289\sqrt{f_{c}'}$	$0.331\sqrt{f_c'}$	-
С	1.0	1.0	0.0	0.0	0.0	0.0	0.7	0.7	0.0	1.0	1.0	1.0	Y16	1.0	1.0	$0.50\sqrt{f_c'}$	$0.58\sqrt{f_c'}$	$0.289 \sqrt{f_c'}$	$0.331\sqrt{f_c'}$	_
d	1.0	1.0	0.0	1.0	0.0	0.0	0.7	1.0	0.7	1.0	1.0	1.0	Υnσ	1.0	1.0	$0.50\sqrt{f_c'}$	$0.58\sqrt{f_c'}$	$0.289\sqrt{f_c'}$	$0.331\sqrt{f_{c}'}$	1
е	1.0	0.0	1.0	1.0	1.0	0.0	0.3	0.0	0.3	1.0	1.0	1.0	Yra	1.0	1.0	$0.50\sqrt{f_c'}$	$0.58\sqrt{f_c'}$	$0.289\sqrt{f_c'}$	$0.331\sqrt{f_{c}'}$	2
f	1.0	0.0	0.0	1.0	1.0	1.0	0.3	0.0	0.3	1.0	1.0	1.0	Yra	1.0	1.0	$0.50\sqrt{f_c'}$	$0.58\sqrt{f_c'}$	$0.289 \sqrt{f'_c}$	$0.331\sqrt{f'_c}$	3

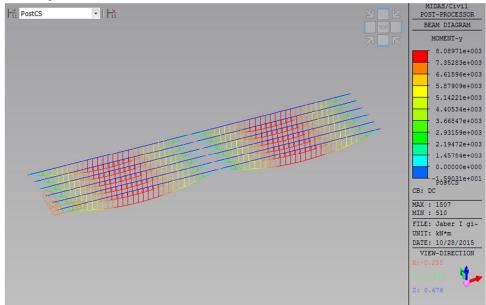
For SLS,

tensile stress limit according to table 5.14.2.3.3-1 = 0.5\*sqrt(50) = 3.54 (N/mm2)

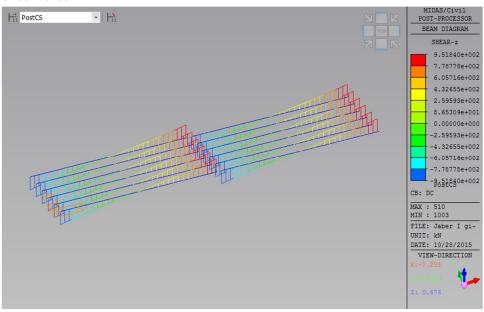
## 6. Internal force results due to load effect (kN,m)

#### 6.1 Dead load

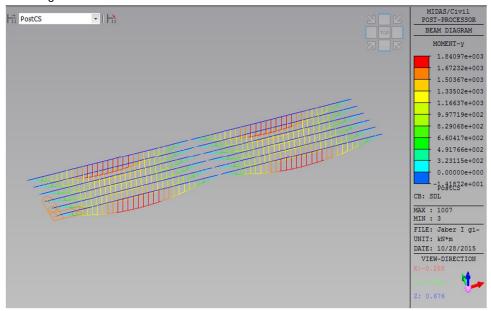
## **Bending Moment**



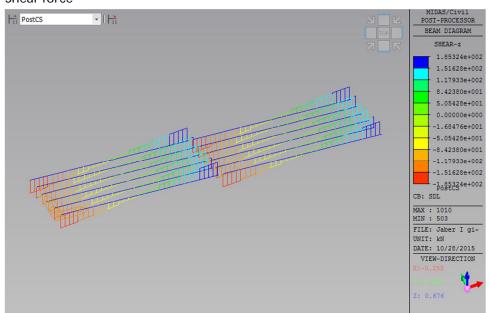
#### Shear force



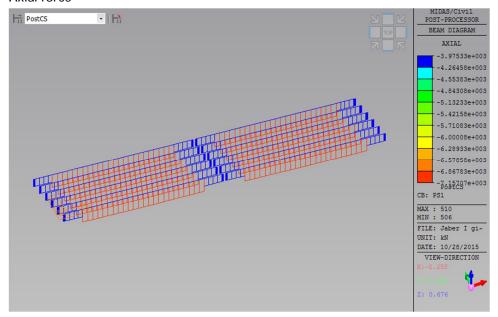
## 6.2 SIDL Bending moment

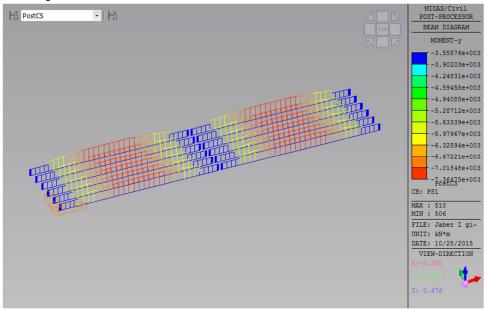


#### Shear force

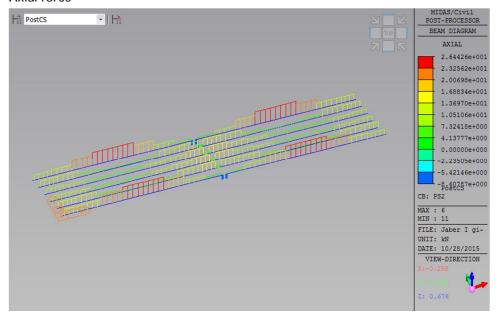


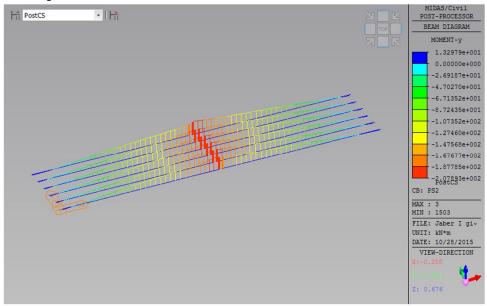
## 6.3 Prestressing primary Axial force





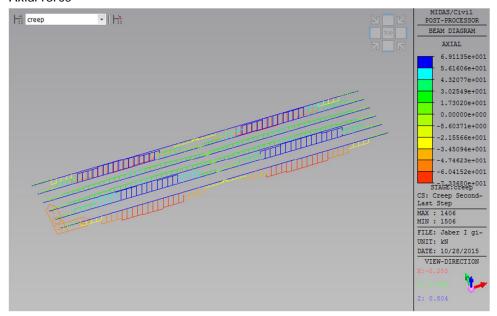
## 6.4 Prestressing secondary Axial force

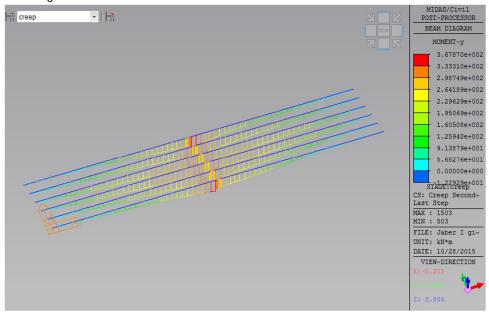




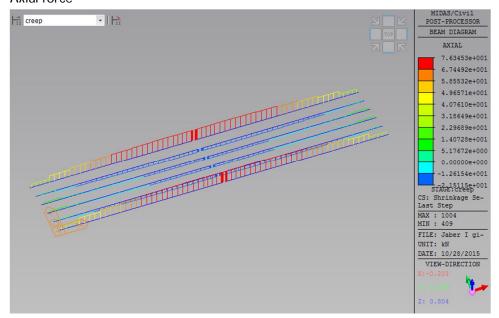
## 6.5 Creep

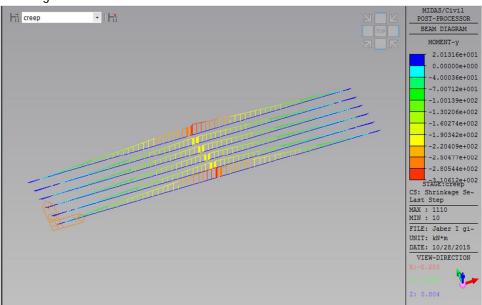
#### Axial force



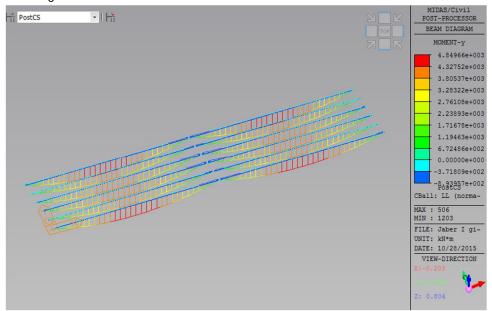


## 6.6 Shrinkage Axial force

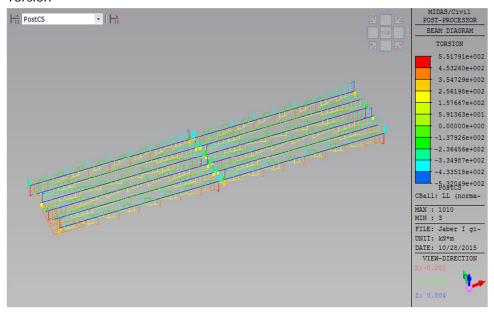




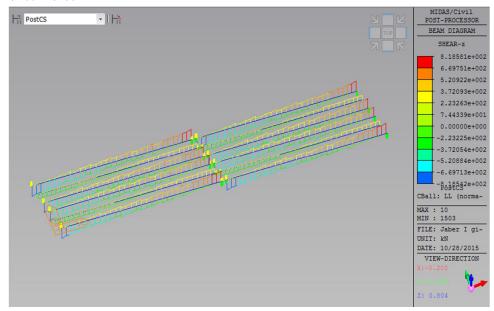
## 6.7 Normal live load Bending moment



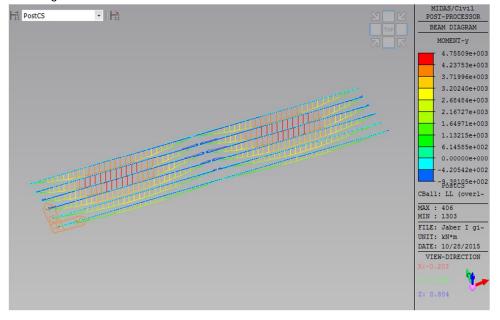
#### Torsion



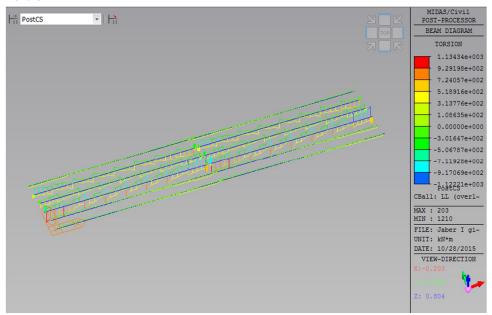
#### Shear force



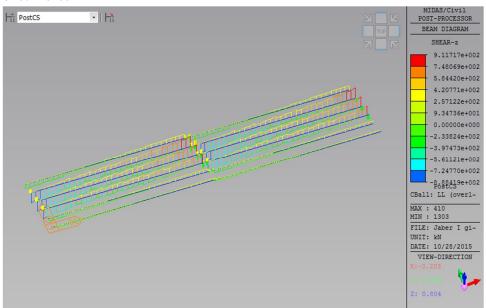
## 6.8 Overload live load Bending moment



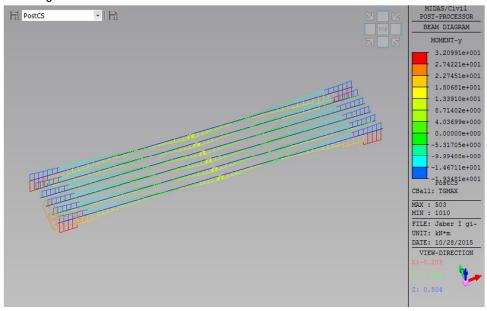
#### Torsion



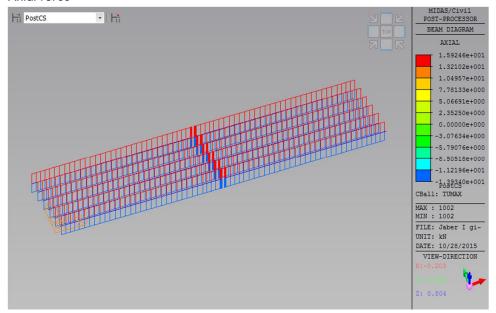
#### Shear force



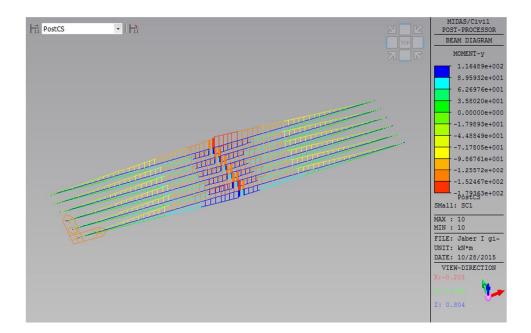
## 6.9 Temperature Gradient Bending moment



## 6.10 Temperature uniformed Axial force



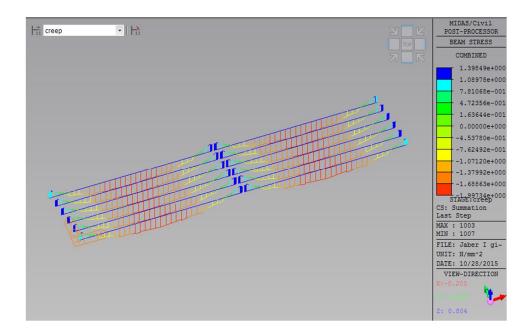
## 6.11 Settlement Bending moment



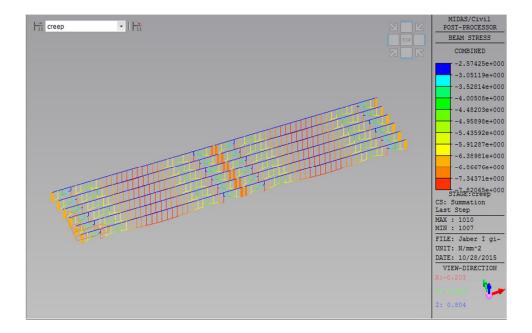
## 7. SLS stress checking (N/mm2)

## 7.1 After creep and shrinkage, 10,000days

Top stress (Compressive limit = 22.5 N/mm2, tensile limit = 1.76N/mm2) Check results: OK



Bottom stress (Compressive limit = 22.5 N/mm2, tensile limit = 1.76N/mm2) Check results: OK

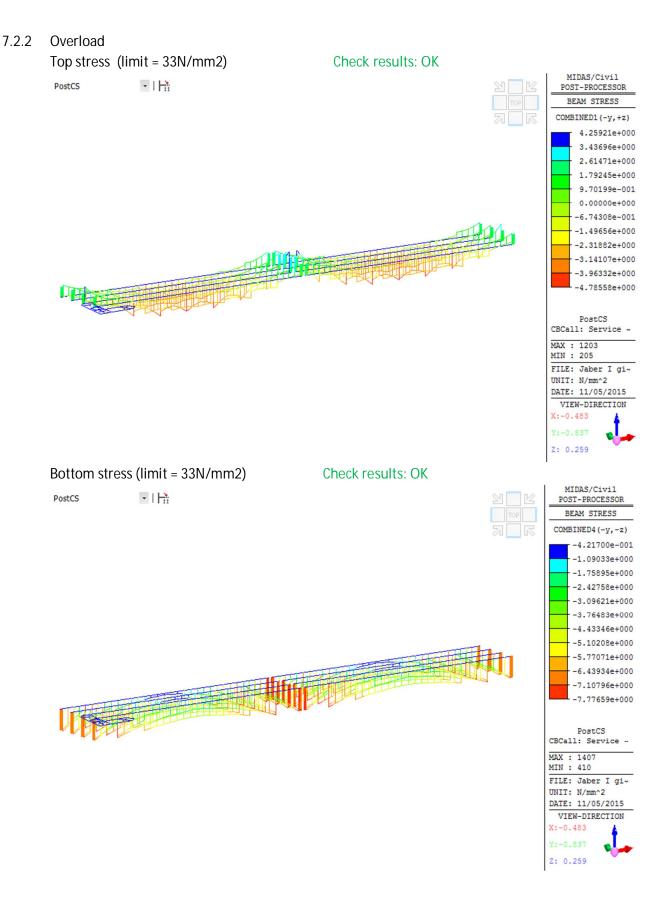


#### 7.2 SLS I-b (compressive stress checking) 7.2.1 Normal live load Top stress (limitation = 30 N/mm2) Check results: OK MIDAS/Civil - | <del>| 11</del> PostCS POST-PROCESSOR BEAM STRESS COMBINED1 (-y, +z) 3.23231e+000 2.60195e+000 1.97159e+000 1.34123e+000 7.10868e-001 0.00000e+000 -5.49854e-001 -1.18021e+000 -1.81058e+000 -2.44094e+000 -3.07130e+000 -3.70166e+000 PostCS CBCall: Service ~ MAX : 1103 MIN : 1107 FILE: Jaber I gi~ UNIT: N/mm^2 DATE: 11/05/2015 VIEW-DIRECTION X:-0.483 Z: 0.259 Bottom stress (limitation = 30 N/mm2) Check results: OK, MIDAS/Civil - | <u>| 11</u> PostCS POST-PROCESSOR BEAM STRESS COMBINED4 (-y,-z) -1.03937e+000 -1.64482e+000 -2.25026e+000 -2.85571e+000 -3.46115e+000 -4.06660e+000 -4.67204e+000 -5.27749e+000 -5.88293e+000 -6.48838e+000 -7.09382e+000 -7.69927e+000

PostCS
CBCall: Service ~

MAX: 1307
MIN: 309
FILE: Jaber I gi~
UNIT: N/mm^2
DATE: 11/05/2015
VIEW-DIRECTION
X:-0.483

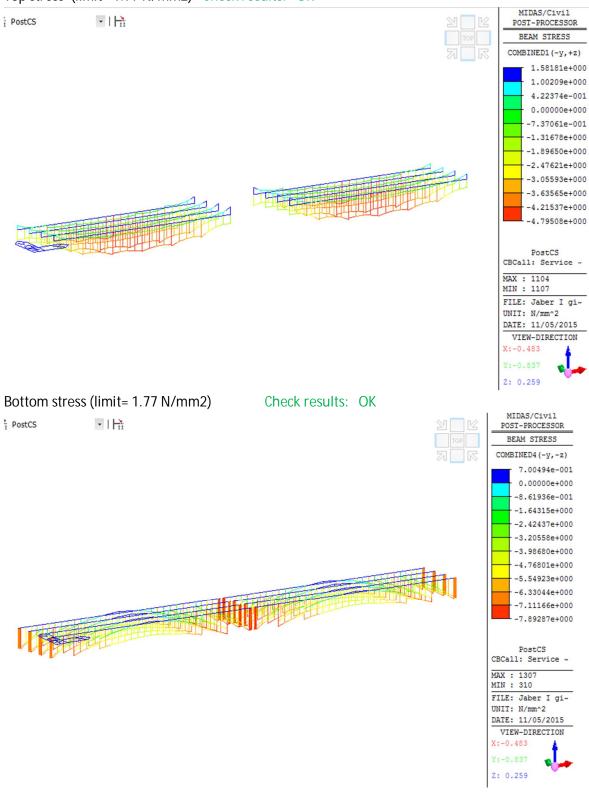
Z: 0.259



#### 7.3 SLS III (tensile stress checking)

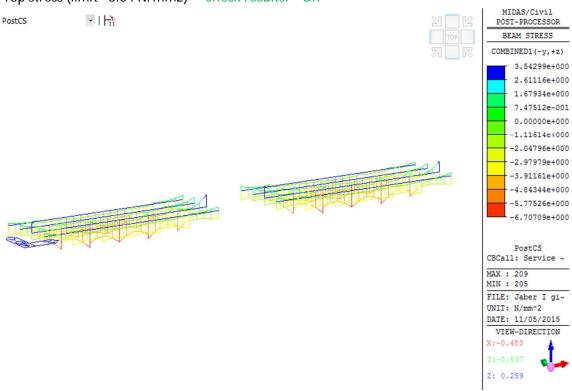
#### 7.3.1 normal live load

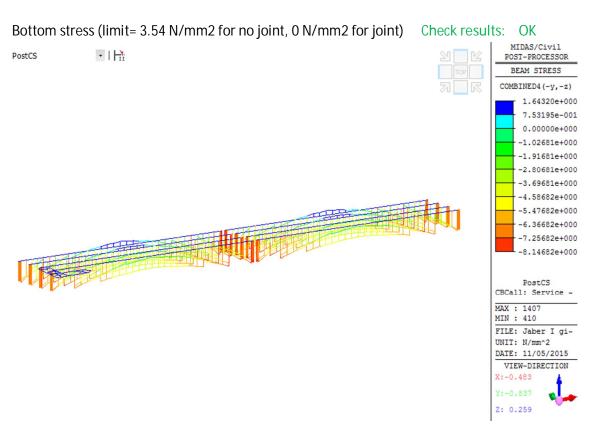
Top stress (limit= 1.77 N/mm2) Check results: OK



#### 7.3.2 overload

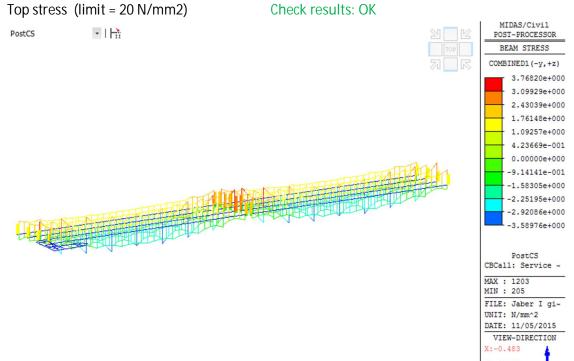




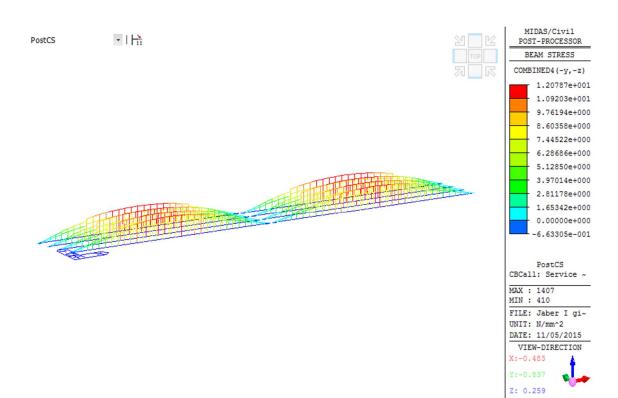


### 7.4 SLS VI (additional compressive stress checking)

Bottom stress (limit = 20.00 N/mm2)



Z: 0.259



Check results: OK

## The summaries of checking for SLS can be shown below. Compressive stress

	Load case	Equation	Locations	Normal load stress limit	Stress by Analysis	Checking
	Dead load	0.45f'c	upper fiber	22.50	5.56	OK
	Dead Ioad	0.451 C	lower fiber	22.50	9.35	OK
SLS I (normal	Dead load + live load	0.6 φ f'c	upper fiber	22.50	5.91	OK
load)	Dead load + live load	υ.οφις	lower fiber	24.22	11.49	OK
SLS I (over	Dead load + live load	0 ( J f'o	upper fiber	24.75	5.91	OK
load)	Dead load + live load	0.6 φ f'c	lower fiber	26.65	11.49	OK
SLS VI (normal	Dood load : live load	0.4f'c	upper fiber	20.00	4.59	OK
load)	Dead load + live load	0.416	lower fiber	20.00	4.96	OK

### Tensile stress (location other than joint)

	Load case	Locations	limitation	Checking
	Dead load	upper fiber	1.77	OK
	Deau Ioau	lower fiber	1.77	OK
SLS III (normal	Dead load + live load	upper fiber	1.77	OK
load)	Deau Ioau + Iive Ioau	lower fiber	1.77	OK
SLS III (over	Dead load + live load	upper fiber	3.54	OK
load)		lower fiber	3.54	OK

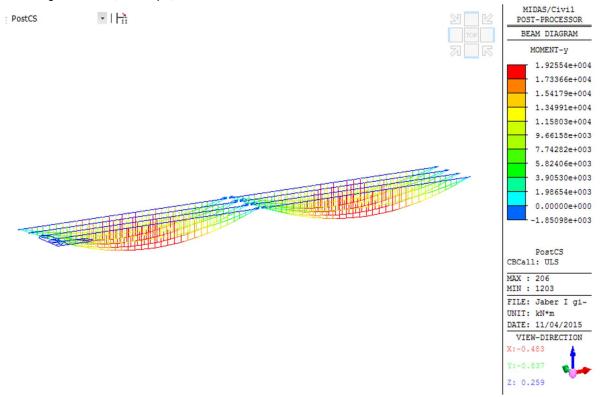
### Tensile stress (location of joint)

	Load case	Locations	limitation	Checking
	Dead load	upper fiber	0.00	OK
	Deau loau	lower fiber	0.00	OK
SLS III (normal	Dead load + live load	upper fiber	0.00	OK
load)	Deau ioau + iive ioau	lower fiber	0.00	OK
SLS III (over	Dead load + live load	upper fiber	0.00	OK
load)	Deau Ioau + Iive Ioau	lower fiber	0.00	OK

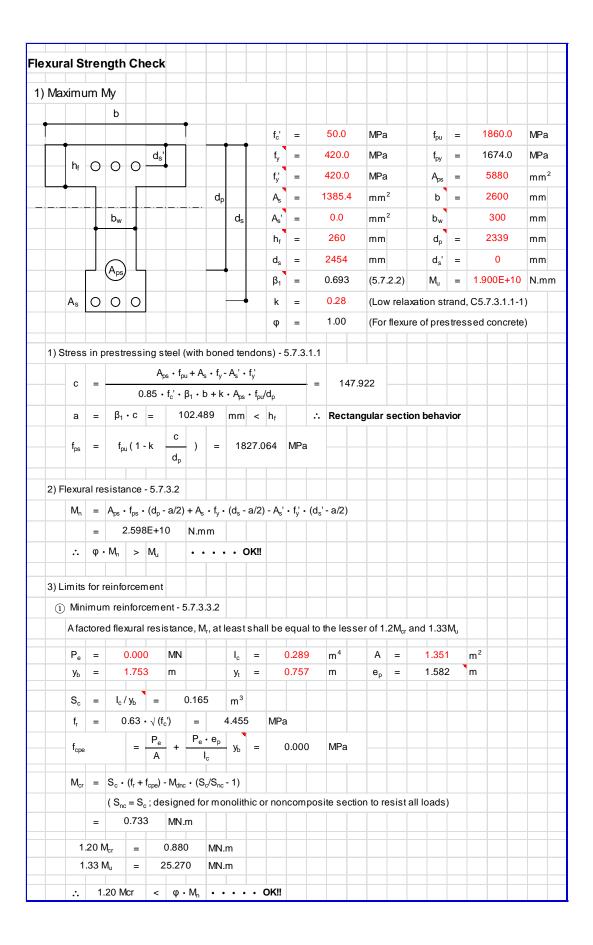
### Principal stress

	Load case	Locations	limitation	Checking
	Dead load	Neutral axis at web	2.04	OK
SLS III (normal load)	Dead load + live load	Neutral axis at web	2.04	OK
SLS III (over load)	Dead load + live load	Neutral axis at web	2.04	OK

## 8. ULS checking – Flexure Strength Bending moment (Envelope)

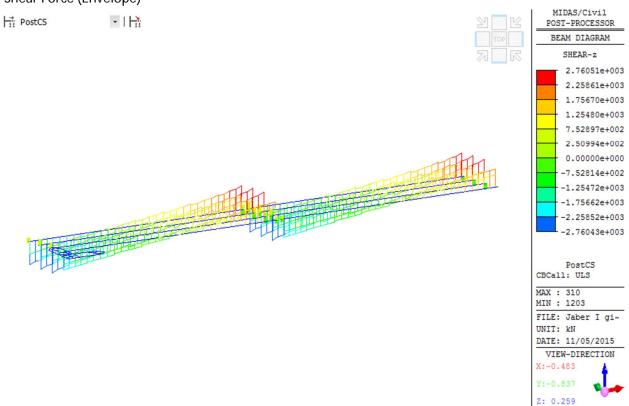


Checking Result: OK

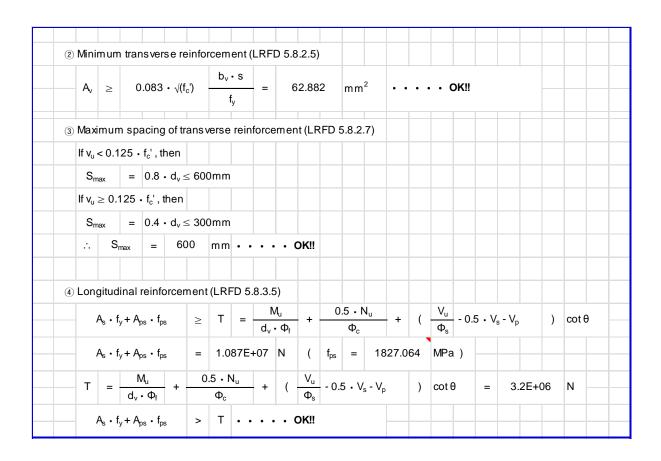


ULS checking – Shear Strength Shear Force (Envelope)

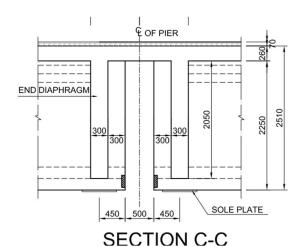
Checking result : OK

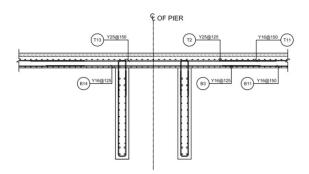


Shear																			
	loca	tion o	of the crit	ical s	ection	forshe	ear sh	hall h	e tak	en a	s the	laro	er of (	) 5 • dv	• cot	A or	dv		
																		_	
			nal face												ection	1 IOF	snea	ır.	
Oth	erwis	se, the	e design	sect	on sh	all be ta	aken	at the	inte	rnal	face	of the	esup	port.					
① Sec	tiona	ıl des	ign mod	el (LF	RFD 5.	.8.2.9)													
			shear re				be de	etern	nined	l as t	the le	esse	r of						
						,													
	_		V <sub>s</sub> + V <sub>l</sub>	_															
V <sub>n</sub>	=	0.25	• f <sub>c</sub> ' • b <sub>v</sub>	• d <sub>v</sub> ·	+ V <sub>p</sub>														
(EL	EME	NT	5	01	)														
$V_{u}$	=	2.7	60E+06	N			N <sub>u</sub>	=	8.8	17E-	+05	N			M <sub>u</sub>	=	3.4	30E+08	N.mr
A <sub>c</sub>	=	7.5	30E+05	mm	2		As	=	30	7.87	6	mm	2		Aps	=		5880	mm <sup>2</sup>
Pe	=	3.9	76E+06	N			f <sub>c</sub> '	=		50.0		MPa	1		f <sub>y</sub>	=		420.0	MPa
Ec	=	34	4,749	MPa			Es	=	20	00,00	0	MPa	1		Ep	=	19	97,000	MPa
b <sub>v</sub>	=		300	mm			d <sub>v</sub>	=		1807	,	mm			Φ	=		0.90	
			• sin θ <sub>p</sub>			0E+00	N		(	$\theta_{p}$	=		0.0	deg	grees	)			
		\	√ <sub>u</sub> - Ф • \	/ <sub>p</sub>		E 05	c	MD											
V <sub>u</sub>	=	(	V <sub>u</sub> - Ф • V Ф • b <sub>v</sub> • с	d <sub>v</sub>	=	5.65	O	MPa	l										
		=																	
f <sub>po</sub>	-	0	.7×f <sub>pu</sub>	-	13	302	MPa	ì											
	ume		= .		0 (	degrees													
	1					N <sub>u</sub> + 0.		/ V,	7) · co	ot θ -	Ans	• f <sub>no</sub>							
ε <sub>x</sub>	=			u v		2 • (E <sub>s</sub>					ρο	μ.		=	-0.	0013	317	≤	0.0010
If th	e val	ue of	εxis nag	gative	the s	train sh	all be	take	en as	:									
			M	./ d <sub>./</sub> +	- 0.5 •	N <sub>u</sub> + 0.	5 · (\	/ V,	) · c	ot θ -	Ans	• f <sub>m</sub>							
ε <sub>x</sub>	=					c · Ac +					- 1	μ.		- =	-0.	0000	)59	≤	0.0010
:.	εχ	=	-0.05	87	x 10 <sup>3</sup>														
Vali		of θ ar	nd β for S				pecif	ied ir	n LRI	-D Fi	gure	5.8.	3.4.2-	1 and T	able :	3.8.3	.4.2-	1	
·.	θ	=	19.90	00	degre	ees ,			β	=		3.180	)						
V <sub>c</sub>	-	(	).083 • £	3 • √(f.	.') • b	• d <sub>v</sub>	=	1.0	12E-	<b>⊦</b> 06	N		H						
V <sub>u</sub>	-		60E+06	N	v	>			(Vc +			=	9.10	7E+05	N				
·.			se reinfo		ent is		ed			. /									
	···ui	01				- 93110	-												
A <sub>req</sub>	=		f <sub>y</sub> •	d <sub>v</sub> · c	ot θ		(V <sub>u</sub> /c	⊅ - V	′ <sub>c</sub> - V <sub>p</sub>	)		=	1	.47	Cm²				
s	=	15	i0 mm	1		A <sub>v</sub> =	Υ	14	×	2	ea	=	3	.079	Cm²				
					cot θ														
	=		v ')	s			- =	4.3	04E-	+06	N								
V <sub>s</sub>							-												
V <sub>s</sub>	=	(V <sub>c</sub> +	$V_s + V_p$		=	5.316E	+06	N											
V <sub>n1</sub>	-		$V_s + V_p$			5.316E		77E	+06	N									



### Checking of link slab

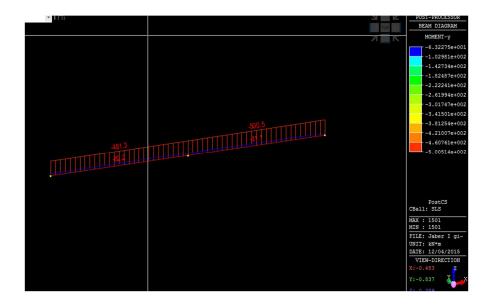




SLS bending moment of link slab with section of 0.26\*2.6 m

Elastic bending moment results

500kNm



## ULS Elastic bending moment results

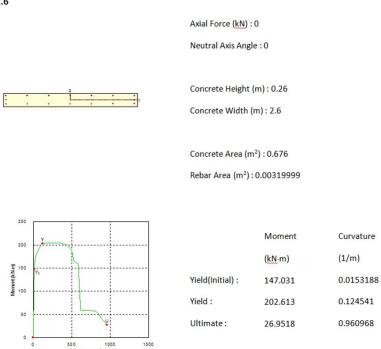
#### 650kNm



### Capacity of the slab

### Moment-Curvature Curve (kN, m)

#### 1. 0.26 by 2.6



It has been confirmed that when the stress of the reinforcement is about 200N/mm2. The flexural stiffness will be reduced to about 1/10 of the elastic one.

OK.

# Sheikh Jaber Al-Ahmad Al-Sabah Causeway Project Main Link – Contract RA/140



### Subiyah Interchange bridge – Substructure of IC bridge

Drawing package No.: RA140-22-BRG-CW-DW-42200-A2

Code	Revision	Date	Title 1	Title 2	Title 3	Comment
RA140-22-BRG-CW-DW-42201	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	GENERAL NOTE	
RA140-22-BRG-CW-DW-42202	A2	22/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	GENERAL ARRANGEMENT	
RA140-22-BRG-CW-DW-42211	A2	22/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A1-WEST) LAYOUT 1/3	
RA140-22-BRG-CW-DW-42212	A2	22/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A1-WEST) LAYOUT 2/3	
RA140-22-BRG-CW-DW-42213	A2	22/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A1-WEST) LAYOUT 3/3	
RA140-22-BRG-CW-DW-42214	A2	22/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A1-EAST) LAYOUT 1/3	
RA140-22-BRG-CW-DW-42215	A2	22/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A1-EAST) LAYOUT 2/3	
RA140-22-BRG-CW-DW-42216	A2	22/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A1-EAST) LAYOUT 3/3	
RA140-22-BRG-CW-DW-42217	A2	22/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A2-WEST) LAYOUT 1/3	
RA140-22-BRG-CW-DW-42218	A2	22/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A2-WEST) LAYOUT 2/3	
RA140-22-BRG-CW-DW-42219	A2	22/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A2-WEST) LAYOUT 3/3	
RA140-22-BRG-CW-DW-42220	A2	22/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A2-EAST) LAYOUT 1/3	
RA140-22-BRG-CW-DW-42221	A2	22/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A2-EAST) LAYOUT 2/3	
RA140-22-BRG-CW-DW-42222	A2	22/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A2-EAST) LAYOUT 3/3	
RA140-22-BRG-CW-DW-42231	A2	22/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	PIER(WEST) LAYOUT	
RA140-22-BRG-CW-DW-42232	A2	22/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	PIER(EAST) LAYOUT	
RA140-22-BRG-CW-DW-42233	A2	22/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	BEARING DETAILS	
RA140-22-BRG-CW-DW-42251	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A1-W1) – REINFORCEMENT ARRANGEMENT 1/8	
RA140-22-BRG-CW-DW-42252	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A1-W1) – REINFORCEMENT ARRANGEMENT 2/8	
RA140-22-BRG-CW-DW-42253	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A1-W1) – REINFORCEMENT ARRANGEMENT 3/8	
RA140-22-BRG-CW-DW-42254	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A1-W1) – REINFORCEMENT ARRANGEMENT 4/8	
RA140-22-BRG-CW-DW-42255	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A1-W1) – REINFORCEMENT ARRANGEMENT 5/8	
RA140-22-BRG-CW-DW-42256	A2	22/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A1-W1) – REINFORCEMENT ARRANGEMENT 6/8	
RA140-22-BRG-CW-DW-42257	A2	22/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A1-W1) – REINFORCEMENT ARRANGEMENT 7/8	







# Sheikh Jaber Al-Ahmad Al-Sabah Causeway Project Main Link – Contract RA/140



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AND 22 REG CV 094 42351  A1 1/07/15  BIANDA DA 10/07/15  BIANDA DA	RA140-22-BRG-CW-DW-42258	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A1-W1) – REINFORCEMENT ARRANGEMENT 8/8	
ALTER 22 REG CV DV 42202 ALTER ALTER 22 REG CV DV 42203 ALTER ALTER ALTER ALTER REGISTER REGISTER ALTER ALTER ALTER ALTER REGISTER ALTER ALTER ALTER ALTER REGISTER ALTER ALTE	RA140-22-BRG-CW-BS-42260	A2	22/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A1-W1) – BAR LIST	
ALTO 2 ARIS CAY DAY-02563 A1 1/195/15 SURVAY PARABAMENTS IN INTERCHANCE RIDIDES SUBSTRUCTURE OF IC REDIDES AUTOMOTIVA AND PRINCIPATION AND PRI	RA140-22-BRG-CW-DW-42261	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A1-W2) – REINFORCEMENT ARRANGEMENT 1/8	
AL 14/09/15 SURVIVAL PRINCES PRINCE SURVIVAL DE CRUDGE ABUTHERTAGE VAN PROCESSANT ABANGEMENT AB  AL 14/09/15 SURVIVAL PRINCESCANDE BROOK SURVIVAL DE CRUDGE ABUTHERTAGE VAN PROCESSANT ABANGEMENT AB  AL 14/09/15 SURVIVAL PRINCESCANDE BROOK SURVIVAL DE CRUDGE ABUTHERTAGE VAN PROCESSANT ABANGEMENT AB  AL 14/09/15 SURVIVAL PRINCESCANDE BROOK SURVIVAL DE CRUDGE ABUTHERTAGE VAN PROCESSANT ABANGEMENT AB  AL 14/09/15 SURVIVAL PRINCESCANDE BROOK SURVIVAL DE CRUDGE ABUTHERTAGE VAN PROCESSANT ABANGEMENT AB  AL 14/09/15 SURVIVAL PRINCESCANDE BROOK SURVIVAL DE CRUDGE ABUTHERTAGE VAN PROCESSANT ABANGEMENT AB  AL 14/09/15 SURVIVAL PRINCESCANDE BROOK SURVIVAL DE CRUDGE ABUTHERTAGE VAN PROCESSANT ABANGEMENT AB  AL 14/09/15 SURVIVAL PRINCESCANDE BROOK SURVIVAL DE CRUDGE ABUTHERTAGE VAN PROCESSANT AB  AL 14/09/15 SURVIVAL PRINCESCANDE BROOK SURVIVAL DE CRUDGE ABUTHERTAGE VAN PROCESSANT AB  AL 14/09/15 SURVIVAL PRINCESCANDE BROOK SURVIVAL DE CRUDGE ABUTHERTAGE VAN PROCESSANT AB  AL 14/09/15 SURVIVAL PRINCESCANDE BROOK SURVIVAL DE CRUDGE ABUTHERTAGE VAN PROCESSANT AB  AL 14/09/15 SURVIVAL PRINCESCANDE BROOK SURVIVAL DE CRUDGE ABUTHERTAGE VAN PROCESSANT ABANGEMENT TO  AL 14/09/15 SURVIVAL PRINCESCANDE BROOK SURVIVAL DE CRUDGE ABUTHERTAGE VAN PROCESSANT ABANGEMENT TO  AL 14/09/15 SURVIVAL PRINCESCANDE BROOK SURVIVAL DE CRUDGE ABUTHERTAGE VAN PROCESSANT ABANGEMENT TO  AL 14/09/15 SURVIVAL PRINCESCANDE BROOK SURVIVAL DE CRUDGE ABUTHERTAGE VAN PROCESSANT ABANGEMENT TO  AL 14/09/15 SURVIVAL PRINCESCANDE BROOK SURVIVAL DE CRUDGE ABUTHERTAGE VAN PROCESSANT ABANGEMENT TO  AL 14/09/15 SURVIVAL PRINCESCANDE ABUTHERTAGE BROOK SURVIVAL DE CRUDGE ABUTHERTAGE VAN PROCESSANT ABANGEMENT TO  AL 14/09/15 SURVIVAL PRINCESCANDE BROOK SURVIVAL DE CRUDGE ABUTHERTAGE VAN PROCESSANT ABANGEMENT TO  AL 14/09/15 SURVIVAL PRINCESCANDE BROOK SURVIVAL DE CRUDGE ABUTHERTAGE VAN PROCESSANT ABANGEMENT TO  AL 14/09/15 SURVIVAL PRINCESCANDE BROOK SURVIVAL DE CRUDGE ABUTHERTAGE VAN PROCESSANT ABANGEMENT TO  AL 14/09/15 SURVIVAL PRINCESCANDE BROOK SURVIVAL DE CRUDGE ABU	RA140-22-BRG-CW-DW-42262	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A1-W2) – REINFORCEMENT ARRANGEMENT 2/8	
AUDIO 22-886 CW - OW - 42265	RA140-22-BRG-CW-DW-42263	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A1-W2) – REINFORCEMENT ARRANGEMENT 3/8	
AL 14/89/15 SUBMAN ENTERCHANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENTIAL-W2] - REINFORCEMENT ARRANGEMENT 6/8  MAI-92-28-96-CW-0W-42267 AL 14/89/15 SUBMAN EMBANAMENT & INTERCHANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENTIAL-W2] - REINFORCEMENT ARRANGEMENT 6/8  MAI-92-28-96-CW-0W-42268 AL 14/89/15 SUBMAN EMBANAMENT & INTERCHANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENTIAL-W2] - REINFORCEMENT ARRANGEMENT 8/8  MAI-92-28-96-CW-0W-42271 AL 14/89/15 SUBMAN EMBANAMENT & INTERCHANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENTIAL-W2] - REINFORCEMENT ARRANGEMENT 8/8  MAI-92-28-96-CW-0W-42272 AL 14/89/15 SUBMAN EMBANAMENT & INTERCHANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENTIAL-W2] - REINFORCEMENT ARRANGEMENT 1/8  MAI-92-28-96-CW-0W-42272 AL 14/89/15 SUBMAN EMBANAMENT & INTERCHANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENTIAL-W2] - REINFORCEMENT ARRANGEMENT 1/8  MAI-92-28-96-CW-0W-42273 AL 14/89/15 SUBMAN EMBANAMENT & INTERCHANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENTIAL-W2] - REINFORCEMENT ARRANGEMENT 1/8  MAI-92-28-96-CW-0W-42273 AL 14/89/15 SUBMAN EMBANAMENT & INTERCHANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENTIAL-W2] - REINFORCEMENT ARRANGEMENT 1/8  MAI-92-28-96-CW-0W-42275 AL 14/89/15 SUBMAN EMBANAMENT & INTERCHANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENTIAL-W2] - REINFORCEMENT ARRANGEMENT 1/8  MAI-92-28-96-CW-0W-42276 A2 27/99/15 SUBMAN EMBANAMENT & INTERCHANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENTIAL-W2] - REINFORCEMENT ARRANGEMENT 1/8  MAI-92-28-96-CW-0W-42276 A2 27/99/15 SUBMAN EMBANAMENT & INTERCHANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENTIAL-W2] - REINFORCEMENT ARRANGEMENT 1/8  MAI-92-28-96-CW-0W-42276 A2 27/99/15 SUBMAN EMBANAMENT & INTERCHANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENTIAL-W2] - REINFORCEMENT ARRANGEMENT 1/8  MAI-92-28-96-CW-0W-42276 A1 14/89/15 SUBMAN EMBANAMENT & INTERCHANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENTIAL-W2] - REINFORCEMENT ARRANGEMENT 1/8  MAI-92-28-96-CW-0W-42276 A1 14/89/15 SUBMAN EMBANAMENT & INTERCHANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENTIAL-W2] - R	RA140-22-BRG-CW-DW-42264	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A1-W2) – REINFORCEMENT ARRANGEMENT 4/8	
NATIO 22-BIS CW-DW-42287 A1 1/09/15 SUBTAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(AL-W2) – REINFORCEMENT ARRANGEMENT 1/8  NATIO 22-BIS CW-DW-42270 A1 1/09/15 SUBTAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(AL-W2) – BAB LIST  NATIO 22-BIS CW-DW-42271 A1 1/09/15 SUBTAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(AL-W2) – BAB LIST  NATIO 22-BIS CW-DW-42272 A1 1/09/15 SUBTAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(AL-W2) – BAB LIST  NATIO 22-BIS CW-DW-42272 A1 1/09/15 SUBTAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(AL-W2) – BAB LIST  NATIO 22-BIS CW-DW-42273 A1 1/09/15 SUBTAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(AL-W2) – BAB LIST  NATIO 22-BIS CW-DW-42273 A1 1/09/15 SUBTAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(AL-W2) – BERIDGE SUBSTRUCTURE OF IC BRIDGE ABUTME	RA140-22-BRG-CW-DW-42265	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A1-W2) – REINFORCEMENT ARRANGEMENT 5/8	
A 1 14/09/15 SURIVAH EMBANMENT & INTECHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(ALW2) — BENFORCEMENT ARRANGEMENT #/8  A1 14/09/15 SURIVAH EMBANMENT & INTECHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(ALW2) — BENFORCEMENT ARRANGEMENT #/8  A2 14/09/15 SURIVAH EMBANMENT & INTECHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(ALW2) — BENFORCEMENT ARRANGEMENT #/8  A2 14/09/15 SURIVAH EMBANMENT & INTECHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(ALW2) — BENFORCEMENT ARRANGEMENT #/8  A2 14/09/15 SURIVAH EMBANMENT & INTECHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(ALW2) — BENFORCEMENT ARRANGEMENT #/8  A2 14/09/15 SURIVAH EMBANMENT & INTECHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(ALW2) — BENFORCEMENT ARRANGEMENT #/8  A2 22/09/15 SURIVAH EMBANMENT & INTECHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(ALW2) — BENFORCEMENT ARRANGEMENT #/8  A2 22/09/15 SURIVAH EMBANMENT & INTECHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(ALW2) — BENFORCEMENT ARRANGEMENT #/8  A2 22/09/15 SURIVAH EMBANMENT & INTECHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(ALW2) — BENFORCEMENT ARRANGEMENT #/8  A2 22/09/15 SURIVAH EMBANMENT & INTECHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(ALW2) — BENFORCEMENT ARRANGEMENT #/8  A2 22/09/15 SURIVAH EMBANMENT & INTECHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(ALW2) — BENFORCEMENT ARRANGEMENT #/8  A2 22/09/15 SURIVAH EMBANMENT & INTECHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(ALW2) — BENFORCEMENT ARRANGEMENT #/8  A2 22/09/15 SURIVAH EMBANMENT & INTECHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(ALW2) — BENFORCEMENT ARRANGEMENT #/8  A2 22/09/15 SURIVAH EMBANMENT & INTECHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(ALW2) — BENFORCEMENT ARRANGEMENT #/8  A2 22/09/15 SURIVAH EMBANMENT & INTECHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(ALW2) — BENFORCEMENT ARRANGEMENT #/8  A2 42/09/15 SURIVAH EMBANMENT & INTECHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(ALW2) — BENFORCEMENT ARRANGEMENT #/8  A2 42/09/15 SURIVAH EMBANMENT & INTECHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE A	RA140-22-BRG-CW-DW-42266	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A1-W2) – REINFORCEMENT ARRANGEMENT 6/8	
RATIO-22-88G-CW-04-2277 A1 14/69/15 SUBYAH FMAANKAMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT[A1-W2) - BAR LIST  A1 14/69/15 SUBYAH FMAANKAMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT[A2-W1] - BRINGREMENT ARRANGEMENT 1/8  A2 10/22-88G-CW-0W-42272 A1 14/69/15 SUBYAH EMBANKAMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT[A2-W1] - BRINGREMENT ARRANGEMENT 2/8  A2 10/29/15 SUBYAH EMBANKAMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT[A2-W1] - BRINGREMENT ARRANGEMENT 3/8  A2 10/29/15 SUBYAH EMBANKAMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT[A2-W1] - BRINGREMENT ARRANGEMENT 4/8  A2 10/29/15 SUBYAH EMBANKAMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT[A2-W1] - BRINGREMENT ARRANGEMENT 4/8  A2 10/29/15 SUBYAH EMBANKAMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT[A2-W1] - BRINGREMENT ARRANGEMENT 4/8  A2 10/29/15 SUBYAH EMBANKAMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT[A2-W1] - BRINGREMENT ARRANGEMENT 5/8  A2 10/29/15 SUBYAH EMBANKAMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT[A2-W1] - BRINGREMENT ARRANGEMENT 7/8  A2 10/29/15 SUBYAH EMBANKAMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT[A2-W1] - BRINGREMENT ARRANGEMENT 7/8  A3 10/22-88 G-CW-DW-42278 A1 14/09/15 SUBYAH EMBANKAMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT[A2-W2] - BRINGREMENT ARRANGEMENT 1/8  A3 10/22-88 G-CW-DW-42282 A1 14/09/15 SUBYAH EMBANKAMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT[A2-W2] - BRINGREMENT ARRANGEMENT 1/8  A3 10/29/15 SUBYAH EMBANKAMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT[A2-W2] - BRINGREMENT ARRANGEMENT 1/8  A3 10/22-88 G-CW-DW-42283 A1 14/09/15 SUBYAH EMBANKAMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT[A2-W2] - BRINGREMENT ARRANGEMENT 1/8  A3 10/22-88 G-CW-DW-42283 A1 14/09/15 SUBYAH EMBANKAMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT[A2-W2] - BRINGREMENT ARRANGEMENT A/8  A3 10/29-15 SUBYAH EMBANKAMENT & INTE	RA140-22-BRG-CW-DW-42267	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A1-W2) – REINFORCEMENT ARRANGEMENT 7/8	
RA140 22 BRG CW DW 42271 A1 14/09/15 SUBTYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(AZ WI) - REINFORCEMENT ABRANGEMENT 1/8  RA140 22 BRG CW DW 42273 A1 14/09/15 SUBTYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(AZ WI) - REINFORCEMENT ABRANGEMENT 3/8  RA140 22 BRG CW DW 42274 A1 14/09/15 SUBTYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(AZ WI) - REINFORCEMENT ABRANGEMENT 3/8  RA140 22 BRG CW DW 42274 A1 14/09/15 SUBTYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(AZ WI) - REINFORCEMENT ABRANGEMENT 3/8  RA140 22 BRG CW DW 42275 A1 14/09/15 SUBTYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(AZ WI) - REINFORCEMENT ABRANGEMENT 3/8  RA140 22 BRG CW DW 42276 A2 22/09/15 SUBTYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(AZ WI) - REINFORCEMENT ABRANGEMENT 5/8  RA140 22 BRG CW DW 42277 A2 22/09/15 SUBTYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(AZ WI) - REINFORCEMENT ABRANGEMENT 6/8  RA140 22 BRG CW DW 42277 A2 22/09/15 SUBTYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(AZ WI) - REINFORCEMENT ABRANGEMENT 6/8  RA140 22 BRG CW DW 42277 A2 22/09/15 SUBTYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(AZ WI) - REINFORCEMENT ARRANGEMENT 7/8  RA140 22 BRG CW DW 42278 A1 14/09/15 SUBTYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(AZ WI) - REINFORCEMENT ARRANGEMENT 1/8  RA140 22 BRG CW DW 42281 A1 14/09/15 SUBTYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(AZ WI) - REINFORCEMENT ABRANGEMENT 1/8  RA140 22 BRG CW DW 42281 A1 14/09/15 SUBTYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(AZ WI) - REINFORCEMENT ABRANGEMENT 1/8  RA140 22 BRG CW DW 42281 A1 14/09/15 SUBTYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(AZ WI) - REINFORCEMENT ABRANGEMENT 1/8  RA140 22 BRG CW DW 42281 A1 14/09/15 SUBTYAH EMBANKMENT & INTERCHANGE	RA140-22-BRG-CW-DW-42268	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A1-W2) – REINFORCEMENT ARRANGEMENT 8/8	
A1 14/09/15 SUBWAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W1) - REINFORCEMENT ARRANGEMENT 1/8  A1 14/09/15 SUBWAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W1) - REINFORCEMENT ARRANGEMENT 3/8  A1 14/09/15 SUBWAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W1) - REINFORCEMENT ARRANGEMENT 3/8  A1 14/09/15 SUBWAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W1) - REINFORCEMENT ARRANGEMENT 3/8  A1 14/09/15 SUBWAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W1) - REINFORCEMENT ARRANGEMENT 5/8  A2 22/09/15 SUBWAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W1) - REINFORCEMENT ARRANGEMENT 6/8  ABUTMENT(A2-W1) - REINFORCEMENT ARRANGEMENT 7/8  ABUTMENT(A2-W2)	RA140-22-BRG-CW-BS-422570	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A1-W2) – BAR LIST	
A1 1/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W1) - REINFORCEMENT ARRANGEMENT 3/8  A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W1) - REINFORCEMENT ARRANGEMENT 4/8  A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W1) - REINFORCEMENT ARRANGEMENT 6/8  A3-04-22-BRG-CW-DW-42277 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W1) - REINFORCEMENT ARRANGEMENT 7/8  A3-04-22-BRG-CW-DW-42278 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W1) - REINFORCEMENT ARRANGEMENT 7/8  A3-04-22-BRG-CW-DW-42278 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W1) - REINFORCEMENT ARRANGEMENT 7/8  A3-04-22-BRG-CW-DW-42278 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W1) - REINFORCEMENT ARRANGEMENT 8/8  A3-04-22-BRG-CW-DW-42281 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) - REINFORCEMENT ARRANGEMENT 1/8  A3-04-22-BRG-CW-DW-42282 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) - REINFORCEMENT ARRANGEMENT 1/8  A3-04-22-BRG-CW-DW-42283 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) - REINFORCEMENT ARRANGEMENT 2/8  A3-04-02-BRG-CW-DW-42284 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) - REINFORCEMENT ARRANGEMENT 3/8  A3-04-02-BRG-CW-DW-42284 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) - REINFORCEMENT ARRANGEMENT 3/8  A3-04-02-BRG-CW-DW-42284 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) - REINFORCEMENT ARRANGEMENT 3/8  A3-04-02-BRG-CW-DW-42284 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) - REINFORCEMENT ARRANGEMENT	RA140-22-BRG-CW-DW-42271	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A2-W1) – REINFORCEMENT ARRANGEMENT 1/8	
A 1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W1) - REINFORCEMENT ARRANGEMENT 4/8  A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W1) - REINFORCEMENT ARRANGEMENT 5/8  A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W1) - REINFORCEMENT ARRANGEMENT 6/8  A3.40-22-BRG-CW-DW-42277 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W1) - REINFORCEMENT ARRANGEMENT 7/8  A3.40-22-BRG-CW-DW-42278 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W1) - REINFORCEMENT ARRANGEMENT 8/8  A3.40-22-BRG-CW-DW-42281 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W1) - REINFORCEMENT ARRANGEMENT 8/8  A3.40-22-BRG-CW-DW-42281 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) - REINFORCEMENT ARRANGEMENT 1/8  A3.40-22-BRG-CW-DW-42282 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) - REINFORCEMENT ARRANGEMENT 1/8  A3.40-22-BRG-CW-DW-42283 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) - REINFORCEMENT ARRANGEMENT 3/8  A3.40-22-BRG-CW-DW-42284 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) - REINFORCEMENT ARRANGEMENT 3/8  A3.40-22-BRG-CW-DW-42284 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) - REINFORCEMENT ARRANGEMENT 3/8  A3.40-22-BRG-CW-DW-42284 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) - REINFORCEMENT ARRANGEMENT 3/8  A3.40-22-BRG-CW-DW-42284 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) - REINFORCEMENT ARRANGEMENT 3/8  A3.40-22-BRG-CW-DW-42285 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) - REINFORCEMENT ARRANGEME	RA140-22-BRG-CW-DW-42272	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A2-W1) – REINFORCEMENT ARRANGEMENT 2/8	
RA140-22-BRG-CW-DW-42275 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W1) – REINFORCEMENT ARRANGEMENT 5/8 RA140-22-BRG-CW-DW-42277 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W1) – REINFORCEMENT ARRANGEMENT 7/8 RA140-22-BRG-CW-DW-42278 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W1) – REINFORCEMENT ARRANGEMENT 7/8 RA140-22-BRG-CW-DW-42280 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W1) – REINFORCEMENT ARRANGEMENT 8/8 RA140-22-BRG-CW-DW-42281 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 1/8 RA140-22-BRG-CW-DW-42282 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 1/8 RA140-22-BRG-CW-DW-42283 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 2/8 RA140-22-BRG-CW-DW-42283 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 3/8 RA140-22-BRG-CW-DW-42284 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 3/8 RA140-22-BRG-CW-DW-42284 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 3/8 RA140-22-BRG-CW-DW-42284 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 3/8 RA140-22-BRG-CW-DW-42285 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 5/8	RA140-22-BRG-CW-DW-42273	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A2-W1) – REINFORCEMENT ARRANGEMENT 3/8	
RA140-22-BRG-CW-DW-42276 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W1) - REINFORCEMENT ARRANGEMENT 6/8 RA140-22-BRG-CW-DW-42277 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W1) - REINFORCEMENT ARRANGEMENT 7/8 RA140-22-BRG-CW-DW-42278 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W1) - REINFORCEMENT ARRANGEMENT 8/8 RA140-22-BRG-CW-DW-42281 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) - REINFORCEMENT ARRANGEMENT 1/8 RA140-22-BRG-CW-DW-42282 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) - REINFORCEMENT ARRANGEMENT 1/8 RA140-22-BRG-CW-DW-42283 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) - REINFORCEMENT ARRANGEMENT 1/8 RA140-22-BRG-CW-DW-42284 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) - REINFORCEMENT ARRANGEMENT 3/8 RA140-22-BRG-CW-DW-42284 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) - REINFORCEMENT ARRANGEMENT 3/8 RA140-22-BRG-CW-DW-42284 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) - REINFORCEMENT ARRANGEMENT 4/8 RA140-22-BRG-CW-DW-42285 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) - REINFORCEMENT ARRANGEMENT 4/8 RA140-22-BRG-CW-DW-42285 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) - REINFORCEMENT ARRANGEMENT 5/8	RA140-22-BRG-CW-DW-42274	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A2-W1) – REINFORCEMENT ARRANGEMENT 4/8	
RA140-22-BRG-CW-DW-42277 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W1) – REINFORCEMENT ARRANGEMENT 7/8  RA140-22-BRG-CW-DW-42278 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W1) – REINFORCEMENT ARRANGEMENT 8/8  RA140-22-BRG-CW-DW-42281 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 1/8  RA140-22-BRG-CW-DW-42282 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 1/8  RA140-22-BRG-CW-DW-42283 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 2/8  RA140-22-BRG-CW-DW-42284 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 3/8  RA140-22-BRG-CW-DW-42284 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 4/8  RA140-22-BRG-CW-DW-42285 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 4/8  RA140-22-BRG-CW-DW-42285 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 4/8  RA140-22-BRG-CW-DW-42285 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 4/8  RA140-22-BRG-CW-DW-42285 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 5/8	RA140-22-BRG-CW-DW-42275	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A2-W1) – REINFORCEMENT ARRANGEMENT 5/8	
RA140-22-BRG-CW-DW-42278 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W1) – REINFORCEMENT ARRANGEMENT 8/8  RA140-22-BRG-CW-DW-42281 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 1/8  RA140-22-BRG-CW-DW-42282 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 2/8  RA140-22-BRG-CW-DW-42283 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 3/8  RA140-22-BRG-CW-DW-42284 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 3/8  RA140-22-BRG-CW-DW-42284 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 4/8  RA140-22-BRG-CW-DW-42285 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 4/8  RA140-22-BRG-CW-DW-42285 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 5/8	RA140-22-BRG-CW-DW-42276	A2	22/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A2-W1) – REINFORCEMENT ARRANGEMENT 6/8	
RA140-22-BRG-CW-BS-42280 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W1) – BAR LIST  RA140-22-BRG-CW-DW-42281 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 1/8  RA140-22-BRG-CW-DW-42282 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 2/8  RA140-22-BRG-CW-DW-42283 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 3/8  RA140-22-BRG-CW-DW-42284 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 4/8  RA140-22-BRG-CW-DW-42285 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 4/8  RA140-22-BRG-CW-DW-42285 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 5/8	RA140-22-BRG-CW-DW-42277	A2	22/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A2-W1) – REINFORCEMENT ARRANGEMENT 7/8	
RA140-22-BRG-CW-DW-42281 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 1/8 RA140-22-BRG-CW-DW-42282 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 2/8 RA140-22-BRG-CW-DW-42283 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 3/8 RA140-22-BRG-CW-DW-42284 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 4/8 RA140-22-BRG-CW-DW-42285 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 5/8	RA140-22-BRG-CW-DW-42278	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A2-W1) – REINFORCEMENT ARRANGEMENT 8/8	
RA140-22-BRG-CW-DW-42282 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 2/8  RA140-22-BRG-CW-DW-42283 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 3/8  RA140-22-BRG-CW-DW-42284 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 4/8  RA140-22-BRG-CW-DW-42285 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 4/8  RA140-22-BRG-CW-DW-42285 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 5/8	RA140-22-BRG-CW-BS-42280	A2	22/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A2-W1) – BAR LIST	
RA140-22-BRG-CW-DW-42283 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 3/8 RA140-22-BRG-CW-DW-42284 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 4/8 RA140-22-BRG-CW-DW-42285 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 5/8  RA140-22-BRG-CW-DW-42285 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 5/8	RA140-22-BRG-CW-DW-42281	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 1/8	
RA140-22-BRG-CW-DW-42284 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 4/8  RA140-22-BRG-CW-DW-42285 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 5/8	RA140-22-BRG-CW-DW-42282	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 2/8	
RA140-22-BRG-CW-DW-42285 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 5/8	RA140-22-BRG-CW-DW-42283	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 3/8	
	RA140-22-BRG-CW-DW-42284	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 4/8	
RA140-22-BRG-CW-DW-42286 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 6/8	RA140-22-BRG-CW-DW-42285	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 5/8	
	RA140-22-BRG-CW-DW-42286	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 6/8	
RA140-22-BRG-CW-DW-42287 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 7/8	RA140-22-BRG-CW-DW-42287	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 7/8	
RA140-22-BRG-CW-DW-42288 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-W2) — REINFORCEMENT ARRANGEMENT 8/8	RA140-22-BRG-CW-DW-42288	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A2-W2) – REINFORCEMENT ARRANGEMENT 8/8	







# Sheikh Jaber Al-Ahmad Al-Sabah Causeway Project Main Link – Contract RA/140



March   Marc	RA140-22-BRG-CW-BS-422590	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A2-W2) – BAR LIST	
March   Marc	RA140-22-BRG-CW-DW-42291	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A1-E1) – REINFORCEMENT ARRANGEMENT 1/8	
March   Marc	RA140-22-BRG-CW-DW-42292	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A1-E1) – REINFORCEMENT ARRANGEMENT 2/8	
AND 22 BIS ON OW 42296  A2 20/07/3 SURVAN FUNDAMMENT INTEGRAND ENDOG SURVAN FUNDAMMENT INTEGRAND REDGE SURVA	RA140-22-BRG-CW-DW-42293	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A1-E1) – REINFORCEMENT ARRANGEMENT 3/8	
AND 22 BIS ON DW 42256 A2 22/89/15 SURFINA PARAMETERS REPORT SURFINANCE SERVICE SURFINANC	RA140-22-BRG-CW-DW-42294	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A1-E1) – REINFORCEMENT ARRANGEMENT 4/8	
Mail   12-2 Misc CW 0W 42297   A2   22/09/15   SURVIVE HUMEWINGERT & INTERCHANGE BRIDGE   SURSTRUCTURE OF IC BRIDGE   ADUTMENT(AL-E1) - RENFORCEMENT ARRANGEMENT & INTERCHANGE BRIDGE   SURSTRUCTURE OF IC BRIDGE   ADUTMENT(AL-E1) - RENFORCEMENT ARRANGEMENT & INTERCHANGE BRIDGE   SURSTRUCTURE OF IC BRIDGE   ADUTMENT(AL-E1) - RENFORCEMENT ARRANGEMENT & INTERCHANGE BRIDGE   SURSTRUCTURE OF IC BRIDGE   ADUTMENT(AL-E1) - RENFORCEMENT ARRANGEMENT & INTERCHANGE BRIDGE   SURSTRUCTURE OF IC BRIDGE   ADUTMENT(AL-E2) - RENFORCEMENT ARRANGEMENT & INTERCHANGE BRIDGE   SURSTRUCTURE OF IC BRIDGE   ADUTMENT(AL-E2) - RENFORCEMENT ARRANGEMENT & INTERCHANGE BRIDGE   SURSTRUCTURE OF IC BRIDGE   ADUTMENT AL-E2) - RENFORCEMENT ARRANGEMENT & INTERCHANGE BRIDGE   SURSTRUCTURE OF IC BRIDGE   ADUTMENT AL-E2) - RENFORCEMENT ARRANGEMENT & INTERCHANGE BRIDGE   SURSTRUCTURE OF IC BRIDGE   ADUTMENT AL-E2) - RENFORCEMENT ARRANGEMENT & INTERCHANGE BRIDGE   SURSTRUCTURE OF IC BRIDGE   ADUTMENT AL-E2) - RENFORCEMENT ARRANGEMENT & INTERCHANGE BRIDGE   SURSTRUCTURE OF IC BRIDGE   ADUTMENT AL-E2) - RENFORCEMENT ARRANGEMENT & INTERCHANGE BRIDGE   SURSTRUCTURE OF IC BRIDGE   ADUTMENT AL-E2) - RENFORCEMENT ARRANGEMENT & INTERCHANGE BRIDGE   SURSTRUCTURE OF IC BRIDGE   ADUTMENT AL-E2) - RENFORCEMENT ARRANGEMENT & INTERCHANGE BRIDGE   SURSTRUCTURE OF IC BRIDGE   ADUTMENT AL-E2) - RENFORCEMENT ARRANGEMENT & INTERCHANGE BRIDGE   SURSTRUCTURE OF IC BRIDGE   ADUTMENT AL-E2) - RENFORCEMENT ARRANGEMENT & INTERCHANGE BRIDGE   SURSTRUCTURE OF IC BRIDGE   ADUTMENT AL-E2) - RENFORCEMENT ARRANGEMENT & INTERCHANGE BRIDGE   SURSTRUCTURE OF IC BRIDGE   ADUTMENT AL-E2) - RENFORCEMENT ARRANGEMENT & INTERCHANGE BRIDGE   SURSTRUCTURE OF IC BRIDGE   ADUTMENT AL-E2) - RENFORCEMENT ARRANGEMENT & INTERCHANGE BRIDGE   SURSTRUCTURE OF IC BRIDGE   ADUTMENT AL-E2) - RENFORCEMENT ARRANGEMENT & INTERCHANGE BRIDGE   SURSTRUCTURE OF IC BRIDGE   ADUTMENT AL-E2) - RENFORCEMENT ARRANGEMENT & INTERCHANGE BRIDGE   SURSTRUCTURE OF IC BRIDGE   ADUTMENT AL-E2) - RENFORCEMENT ARRANGEMENT & I	RA140-22-BRG-CW-DW-42295	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A1-E1) – REINFORCEMENT ARRANGEMENT 5/8	
AL 24/09/15 SURPAN EMPERORMENT & INTERCHANCE DRIDGE SUBSTBUCTURE OF IC BRIDGE ADUTMENT (A 1 - 1) - RENFORCEMENT ARRANGEMENT & RENFORCEMENT & RENFORCEMENT ARRANGEMENT & RENFORCEMENT & RENFORCEMENT ARRANGEMENT & RENFORCEMENT & RENFORCEMENT ARRANGEMENT & RENFORCEMENT & RENFORCEMENT & RENFORCEMENT ARRANGEMENT & RENFORCEMENT & RENFORCEMENT ARRANGEMENT & RENFORCEMENT & RENFORCEMENT & RENFORCEMENT ARRANGEMENT & RENFORCEMENT & RENFORCEMENT & RENFORCEMENT ARRANGEMENT & RENFORCEMENT & RENFORCEMENT ARRANGEMENT & RENFORCEMENT & REN	RA140-22-BRG-CW-DW-42296	A2	22/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A1-E1) – REINFORCEMENT ARRANGEMENT 6/8	
AL 10-22-89G-CW-69-4200 A2 22/89/15 SUBWAH EMBANKMENT & INTERCLANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( AL-52) - BAR LEST  MAL40-22-89G-CW-0W-42002 A1 34/89/15 SUBWAH EMBANKMENT & INTERCLANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( AL-52) - BAR LEST  MAL40-22-89G-CW-0W-42002 A1 34/89/15 SUBWAH EMBANKMENT & INTERCLANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( AL-52) - BRIDGECEMENT ARRANGEMENT 2/8  MAL40-22-89G-CW-0W-42003 A1 34/89/15 SUBWAH EMBANKMENT & INTERCLANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( AL-52) - BRIDGECEMENT ARRANGEMENT 3/8  MAL40-22-89G-CW-0W-42004 A1 34/89/15 SUBWAH EMBANKMENT & INTERCLANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( AL-52) - BRIDGECEMENT ARRANGEMENT 3/8  MAL40-22-89G-CW-0W-42004 A1 34/89/15 SUBWAH EMBANKMENT & INTERCLANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( AL-52) - BRIDGECEMENT ARRANGEMENT 3/8  MAL40-22-89G-CW-0W-42006 A1 34/89/15 SUBWAH EMBANKMENT & INTERCLANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( AL-52) - BRIDGECEMENT ARRANGEMENT 3/8  MAL40-22-89G-CW-0W-42006 A1 34/89/15 SUBWAH EMBANKMENT & INTERCLANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( AL-52) - BRIDGECEMENT ARRANGEMENT 3/8  MAL40-22-89G-CW-0W-42008 A1 34/89/15 SUBWAH EMBANKMENT & INTERCLANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( AL-52) - BRIDGECEMENT ARRANGEMENT 3/8  MAL40-22-89G-CW-0W-42008 A1 34/89/15 SUBWAH EMBANKMENT & INTERCLANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( AL-52) - BRIDGECEMENT ARRANGEMENT 3/8  MAL40-22-89G-CW-0W-42016 A1 34/89/15 SUBWAH EMBANKMENT & INTERCLANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( AL-52) - BRIDGECEMENT ARRANGEMENT 3/8  MAL40-22-89G-CW-0W-42016 A1 34/89/15 SUBWAH EMBANKMENT & INTERCLANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( AL-52) - BRIDGECEMENT ARRANGEMENT 3/8  MAL40-22-89G-CW-0W-42016 A1 34/89/15 SUBWAH EMBANKMENT & INTERCLANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( AL-52) - BRIDGECEMENT ARRANGEMENT 3/8  MAL40-22-89G-CW-0W-42016 A1 34/89/15 SUBWAH EMBANKMENT & INTERCLANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( AL-52) - BRI	RA140-22-BRG-CW-DW-42297	A2	22/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A1-E1) – REINFORCEMENT ARRANGEMENT 7/8	
ALI	RA140-22-BRG-CW-DW-42298	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A1-E1) – REINFORCEMENT ARRANGEMENT 8/8	
AL 14/09/15 SUBMAH EMBANKMENT & INTERCHANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(IA-12)—REINFORCEMENT ARRANGEMENT 2/8  AL 14/09/15 SUBMAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(IA-12)—REINFORCEMENT ARRANGEMENT 3/8  AL 14/09/15 SUBMAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(IA-12)—REINFORCEMENT ARRANGEMENT 3/8  AL 14/09/15 SUBMAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(IA-12)—REINFORCEMENT ARRANGEMENT 5/8  AL 14/09/15 SUBMAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(IA-12)—REINFORCEMENT ARRANGEMENT 6/8  ABUTMENT(IA-12)—REINFORCEMENT ARRANGEMENT 6/8  ABUTMENT(IA-12)—REINFORCEMENT ARRANGEMENT 7/8  AL 14/09/15 SUBMAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(IA-12)—REINFORCEMENT ARRANGEMENT 7/8  AL 14/09/15 SUBMAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(IA-12)—REINFORCEMENT ARRANGEMENT 7/8  AL 14/09/15 SUBMAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(IA-12)—REINFORCEMENT ARRANGEMENT 1/8  AL 14/09/15 SUBMAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(IA-12)—REINFORCEMENT ARRANGEMENT 1/8  AL 14/09/15 SUBMAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(IA-12)—REINFORCEMENT ARRANGEMENT 1/8  AL 14/09/15 SUBMAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(IA-12)—REINFORCEMENT ARRANGEMENT 1/8  AL 14/09/15 SUBMAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(IA-12)—REINFORCEMENT ARRANGEMENT 3/8  AL 14/09/15 SUBMAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(IA-12)—REINFORCEMENT ARRANGEMENT 3/8  AL 14/09/15 SUBMAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(IA-12)—REINFORCEMENT ARRANGEMENT 3/8  AL 14/09/15 SUBMAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(IA-12)—REINFORCEMENT ARRANGEMENT 3/8  AL 14/09/15 SUBMAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(IA-12)	RA140-22-BRG-CW-BS-42300	A2	22/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A1-E1) – BAR LIST	
A 1 14/09/15 SUBTRAL EMBANMENT & INTERCHANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT (A1 E.1 – REINFORCEMENT ARRANGEMENT 3/8  A1 14/09/15 SUBTRAL EMBANMENT & INTERCHANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT (A1 E.2 – REINFORCEMENT ARRANGEMENT 3/8  A1 14/09/15 SUBTRAL EMBANMENT & INTERCHANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT (A2 E.2) – REINFORCEMENT ARRANGEMENT 6/8  A2 14/09/15 SUBTRAL EMBANMENTE & INTERCHANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT (A2 E.2) – REINFORCEMENT ARRANGEMENT 6/8  A2 14/09/15 SUBTRAL EMBANMENTE & INTERCHANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT (A2 E.2) – REINFORCEMENT ARRANGEMENT 6/8  A2 14/09/15 SUBTRAL EMBANMENT & INTERCHANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT (A2 E.2) – REINFORCEMENT ARRANGEMENT 7/8  A2 14/09/15 SUBTRAL EMBANMENT & INTERCHANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT (A2 E.2) – REINFORCEMENT ARRANGEMENT 7/8  A2 14/09/15 SUBTRAL EMBANMENT & INTERCHANCE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT (A2 E.2) –	RA140-22-BRG-CW-DW-42301	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A1-E2) – REINFORCEMENT ARRANGEMENT 1/8	
ADJUSTATION ALOUGH AND	RA140-22-BRG-CW-DW-42302	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A1-E2) – REINFORCEMENT ARRANGEMENT 2/8	
ANA 140-22-BRG-CW-DW-42305 A1 14/09/15 SUBYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A1-E2) - REINFORCEMENT ARRANGEMENT 5/8  ARA 140-22-BRG-CW-DW-42307 A1 14/09/15 SUBYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A1-E2) - REINFORCEMENT ARRANGEMENT 7/8  ARA 140-22-BRG-CW-DW-42308 A1 14/09/15 SUBYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A1-E2) - REINFORCEMENT ARRANGEMENT 7/8  ARA 140-22-BRG-CW-DW-42300 A1 14/09/15 SUBYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A1-E2) - REINFORCEMENT ARRANGEMENT 7/8  ARA 140-22-BRG-CW-DW-42310 A1 14/09/15 SUBYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A1-E2) - BRA UST  ARA 140-22-BRG-CW-DW-42311 A1 14/09/15 SUBYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A1-E2) - REINFORCEMENT ARRANGEMENT 1/8  ARA 140-22-BRG-CW-DW-42312 A1 14/09/15 SUBYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A2-E3) - REINFORCEMENT ARRANGEMENT 1/8  ARA 140-22-BRG-CW-DW-42313 A1 14/09/15 SUBYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A2-E3) - REINFORCEMENT ARRANGEMENT 3/8  ARA 140-22-BRG-CW-DW-42313 A1 14/09/15 SUBYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A2-E3) - REINFORCEMENT ARRANGEMENT 3/8  ARA 140-22-BRG-CW-DW-42315 A1 14/09/15 SUBYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A2-E3) - REINFORCEMENT ARRANGEMENT 3/8  ARA 140-22-BRG-CW-DW-42316 A2 22/09/15 SUBYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A2-E3) - REINFORCEMENT ARRANGEMENT 5/8  ARA 140-22-BRG-CW-DW-42316 A2 22/09/15 SUBYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A2-E3) - REINFORCEMENT ARRANGEMENT 5/8  ARA 140-22-BRG-CW-DW-42316 A2 22/09/15 SUBYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A2-E3) - REINFORCEMENT ARRANGEMENT 5/8  ARA 140-22-BRG-CW-DW-42318 A1 14/09/15 SUBYAH EMBANKMENT & INTERCH	RA140-22-BRG-CW-DW-42303	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A1-E2) – REINFORCEMENT ARRANGEMENT 3/8	
ANA 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT[A1-E2] - REINFORCEMENT ARRANGEMENT 6/8  RA140-22-BRG-CW-DW-42307 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT[A1-E2] - REINFORCEMENT ARRANGEMENT 7/8  RA140-22-BRG-CW-DW-42308 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT[A1-E2] - REINFORCEMENT ARRANGEMENT 8/8  RA140-22-BRG-CW-DW-42311 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT[A2-E1] - REINFORCEMENT ARRANGEMENT 1/8  RA140-22-BRG-CW-DW-42312 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT[A2-E1] - REINFORCEMENT ARRANGEMENT 1/8  RA140-22-BRG-CW-DW-42313 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT[A2-E1] - REINFORCEMENT ARRANGEMENT 2/8  RA140-22-BRG-CW-DW-42313 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT[A2-E1] - REINFORCEMENT ARRANGEMENT 3/8  RA140-22-BRG-CW-DW-42314 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT[A2-E1] - REINFORCEMENT ARRANGEMENT 4/8  RA140-22-BRG-CW-DW-42315 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT[A2-E1] - REINFORCEMENT ARRANGEMENT 5/8  RA140-22-BRG-CW-DW-42316 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT[A2-E1] - REINFORCEMENT ARRANGEMENT 5/8  RA140-22-BRG-CW-DW-42317 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT[A2-E1] - REINFORCEMENT ARRANGEMENT 7/8  RA140-22-BRG-CW-DW-42317 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT[A2-E1] - REINFORCEMENT ARRANGEMENT 7/8  RA140-22-BRG-CW-DW-42318 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT[A2-E1] - REINFORCEMENT ARRANGEMENT 7/8  RA140-22-BRG-CW-DW-42318 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF I	RA140-22-BRG-CW-DW-42304	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A1-E2) – REINFORCEMENT ARRANGEMENT 4/8	
A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A1-E2) - REINFORCEMENT ARRANGEMENT 7/8  A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A1-E2) - REINFORCEMENT ARRANGEMENT 8/8  A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A1-E2) - BAR LUST  A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A1-E2) - BAR LUST  A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) - REINFORCEMENT ARRANGEMENT 1/8  A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) - REINFORCEMENT ARRANGEMENT 3/8  A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) - REINFORCEMENT ARRANGEMENT 3/8  ARA140-22-BRG-CW-DW-42313 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) - REINFORCEMENT ARRANGEMENT 3/8  ARA140-22-BRG-CW-DW-42314 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) - REINFORCEMENT ARRANGEMENT 5/8  ARA140-22-BRG-CW-DW-42315 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) - REINFORCEMENT ARRANGEMENT 5/8  ARA140-22-BRG-CW-DW-42317 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) - REINFORCEMENT ARRANGEMENT 7/8  ARA140-22-BRG-CW-DW-42317 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) - REINFORCEMENT ARRANGEMENT 7/8  ARA140-22-BRG-CW-DW-42318 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) - REINFORCEMENT ARRANGEMENT 7/8  ARA140-22-BRG-CW-DW-42318 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) - REINFORCEMENT ARRANGEMENT 7/8  ARA140-22-BRG-CW-DW-42318 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT ABUTMENT ABUTME	RA140-22-BRG-CW-DW-42305	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A1-E2) – REINFORCEMENT ARRANGEMENT 5/8	
RA140-22-BRG-CW-DW-42310 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A1-E2) – REINFORCEMENT ARRANGEMENT 8/8 RA140-22-BRG-CW-DW-42311 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A1-E2) – BAR LIST RA140-22-BRG-CW-DW-42312 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 1/8 RA140-22-BRG-CW-DW-42313 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 3/8 RA140-22-BRG-CW-DW-42313 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 3/8 RA140-22-BRG-CW-DW-42314 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 4/8 RA140-22-BRG-CW-DW-42315 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 5/8 RA140-22-BRG-CW-DW-42316 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 6/8 RA140-22-BRG-CW-DW-42317 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 7/8 RA140-22-BRG-CW-DW-42318 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 7/8 RA140-22-BRG-CW-DW-42318 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 7/8 RA140-22-BRG-CW-DW-42318 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 7/8 RA140-22-BRG-CW-DW-42318 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 7/8	RA140-22-BRG-CW-DW-42306	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A1-E2) – REINFORCEMENT ARRANGEMENT 6/8	
RA140-22-BRG-CW-BS-42310 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A1-E2) – BAR LIST  RA140-22-BRG-CW-DW-42311 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 1/8  RA140-22-BRG-CW-DW-42313 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 3/8  RA140-22-BRG-CW-DW-42314 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 3/8  RA140-22-BRG-CW-DW-42314 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 4/8  RA140-22-BRG-CW-DW-42315 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 5/8  RA140-22-BRG-CW-DW-42316 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 6/8  RA140-22-BRG-CW-DW-42317 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 7/8  RA140-22-BRG-CW-DW-42317 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 7/8  RA140-22-BRG-CW-DW-42318 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 7/8  RA140-22-BRG-CW-DW-42318 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 7/8  RA140-22-BRG-CW-DW-42318 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 7/8	RA140-22-BRG-CW-DW-42307	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A1-E2) – REINFORCEMENT ARRANGEMENT 7/8	
RA140-22-BRG-CW-DW-42311 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) - REINFORCEMENT ARRANGEMENT 1/8 RA140-22-BRG-CW-DW-42313 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) - REINFORCEMENT ARRANGEMENT 2/8 RA140-22-BRG-CW-DW-42313 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) - REINFORCEMENT ARRANGEMENT 3/8 RA140-22-BRG-CW-DW-42314 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) - REINFORCEMENT ARRANGEMENT 4/8 RA140-22-BRG-CW-DW-42315 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) - REINFORCEMENT ARRANGEMENT 5/8 RA140-22-BRG-CW-DW-42316 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) - REINFORCEMENT ARRANGEMENT 6/8 RA140-22-BRG-CW-DW-42317 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) - REINFORCEMENT ARRANGEMENT 7/8 RA140-22-BRG-CW-DW-42318 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) - REINFORCEMENT ARRANGEMENT 7/8 RA140-22-BRG-CW-DW-42318 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) - REINFORCEMENT ARRANGEMENT 7/8 RA140-22-BRG-CW-DW-42318 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) - REINFORCEMENT ARRANGEMENT 7/8 RA140-22-BRG-CW-DW-42318 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) - REINFORCEMENT ARRANGEMENT 7/8 RA140-22-BRG-CW-DW-42318 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) - REINFORCEMENT ARRANGEMENT 7/8	RA140-22-BRG-CW-DW-42308	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A1-E2) – REINFORCEMENT ARRANGEMENT 8/8	
RA140-22-BRG-CW-DW-42312 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A2-E1) – REINFORCEMENT ARRANGEMENT 2/8 RA140-22-BRG-CW-DW-42313 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A2-E1) – REINFORCEMENT ARRANGEMENT 3/8 RA140-22-BRG-CW-DW-42314 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A2-E1) – REINFORCEMENT ARRANGEMENT 4/8 RA140-22-BRG-CW-DW-42315 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A2-E1) – REINFORCEMENT ARRANGEMENT 5/8 RA140-22-BRG-CW-DW-42316 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A2-E1) – REINFORCEMENT ARRANGEMENT 6/8 RA140-22-BRG-CW-DW-42317 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A2-E1) – REINFORCEMENT ARRANGEMENT 7/8 RA140-22-BRG-CW-DW-42318 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A2-E1) – REINFORCEMENT ARRANGEMENT 7/8 RA140-22-BRG-CW-DW-42318 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A2-E1) – REINFORCEMENT ARRANGEMENT 8/8	RA140-22-BRG-CW-BS-42310	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A1-E2) – BAR LIST	
RA140-22-BRG-CW-DW-42313 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 3/8 RA140-22-BRG-CW-DW-42314 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 4/8 RA140-22-BRG-CW-DW-42315 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 5/8 RA140-22-BRG-CW-DW-42316 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 6/8 RA140-22-BRG-CW-DW-42317 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 7/8 RA140-22-BRG-CW-DW-42318 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 7/8 RA140-22-BRG-CW-DW-42318 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 8/8	RA140-22-BRG-CW-DW-42311	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 1/8	
RA140-22-BRG-CW-DW-42314 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A2-E1) – REINFORCEMENT ARRANGEMENT 4/8  RA140-22-BRG-CW-DW-42315 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A2-E1) – REINFORCEMENT ARRANGEMENT 5/8  RA140-22-BRG-CW-DW-42316 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A2-E1) – REINFORCEMENT ARRANGEMENT 6/8  RA140-22-BRG-CW-DW-42317 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A2-E1) – REINFORCEMENT ARRANGEMENT 7/8  RA140-22-BRG-CW-DW-42318 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A2-E1) – REINFORCEMENT ARRANGEMENT 8/8	RA140-22-BRG-CW-DW-42312	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A2-E1) – REINFORCEMENT ARRANGEMENT 2/8	
RA140-22-BRG-CW-DW-42315 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 5/8  RA140-22-BRG-CW-DW-42316 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 6/8  RA140-22-BRG-CW-DW-42317 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 7/8  RA140-22-BRG-CW-DW-42318 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – REINFORCEMENT ARRANGEMENT 8/8	RA140-22-BRG-CW-DW-42313	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A2-E1) – REINFORCEMENT ARRANGEMENT 3/8	
RA140-22-BRG-CW-DW-42316 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A2-E1) – REINFORCEMENT ARRANGEMENT 6/8  RA140-22-BRG-CW-DW-42317 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A2-E1) – REINFORCEMENT ARRANGEMENT 7/8  RA140-22-BRG-CW-DW-42318 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A2-E1) – REINFORCEMENT ARRANGEMENT 8/8	RA140-22-BRG-CW-DW-42314	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A2-E1) – REINFORCEMENT ARRANGEMENT 4/8	
RA140-22-BRG-CW-DW-42317 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A2-E1) – REINFORCEMENT ARRANGEMENT 7/8  RA140-22-BRG-CW-DW-42318 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT( A2-E1) – REINFORCEMENT ARRANGEMENT 8/8	RA140-22-BRG-CW-DW-42315	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A2-E1) – REINFORCEMENT ARRANGEMENT 5/8	
RA140-22-BRG-CW-DW-42318 A1 14/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT (A2-E1) – REINFORCEMENT ARRANGEMENT 8/8	RA140-22-BRG-CW-DW-42316	A2	22/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A2-E1) – REINFORCEMENT ARRANGEMENT 6/8	
	RA140-22-BRG-CW-DW-42317	A2	22/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A2-E1) – REINFORCEMENT ARRANGEMENT 7/8	
RA140-22-BRG-CW-BS-42320 A2 22/09/15 SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE SUBSTRUCTURE OF IC BRIDGE ABUTMENT(A2-E1) – BAR LIST	RA140-22-BRG-CW-DW-42318	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A2-E1) – REINFORCEMENT ARRANGEMENT 8/8	
	RA140-22-BRG-CW-BS-42320	A2	22/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A2-E1) – BAR LIST	







# Sheikh Jaber Al-Ahmad Al-Sabah Causeway Project Main Link – Contract RA/140

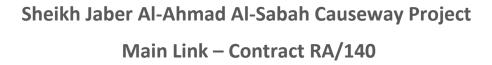


RA140-22-BRG-CW-DW-42321 A1	<b>\1</b>	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT(A2-E2) – REINFORCEMENT ARRANGEMENT 1/8	
RA140-22-BRG-CW-DW-42322 A1	1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A2-E2) – REINFORCEMENT ARRANGEMENT 2/8	
RA140-22-BRG-CW-DW-42323 A1	1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A2-E2) – REINFORCEMENT ARRANGEMENT 3/8	
RA140-22-BRG-CW-DW-42324 A1	1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A2-E2) – REINFORCEMENT ARRANGEMENT 4/8	
RA140-22-BRG-CW-DW-42325 A1	1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A2-E2) – REINFORCEMENT ARRANGEMENT 5/8	
RA140-22-BRG-CW-DW-42326 A1	1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A2-E2) – REINFORCEMENT ARRANGEMENT 6/8	
RA140-22-BRG-CW-DW-42327 A1	1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A2-E2) – REINFORCEMENT ARRANGEMENT 7/8	
RA140-22-BRG-CW-DW-42328 A1	1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A2-E2) – REINFORCEMENT ARRANGEMENT 8/8	
RA140-22-BRG-CW-BS-42330 A1	1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	ABUTMENT( A2-E2) – BAR LIST	
RA140-22-BRG-CW-DW-42351 A1	1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	PIER(PW1) – REINFORCEMENT ARRANGEMENT 1/4	
RA140-22-BRG-CW-DW-42352 A1	1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	PIER(PW1) – REINFORCEMENT ARRANGEMENT 2/4	
RA140-22-BRG-CW-DW-42353 A1	1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	PIER(PW1) – REINFORCEMENT ARRANGEMENT 3/4	
RA140-22-BRG-CW-DW-42354 A1	1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	PIER(PW1) – REINFORCEMENT ARRANGEMENT 4/4	
RA140-22-BRG-CW-BS-42360 A1	1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	PIER(PW1) – BAR LIST	
RA140-22-BRG-CW-DW-42361 A1	1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	PIER(PW2) – REINFORCEMENT ARRANGEMENT 1/4	
RA140-22-BRG-CW-DW-42362 A1	1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	PIER(PW2) – REINFORCEMENT ARRANGEMENT 2/4	
RA140-22-BRG-CW-DW-42363 A1	1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	PIER(PW2) – REINFORCEMENT ARRANGEMENT 3/4	
RA140-22-BRG-CW-DW-42364 A1	1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	PIER(PW2) – REINFORCEMENT ARRANGEMENT 4/4	
RA140-22-BRG-CW-BS-42370 A1	1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	PIER(PW2) – BAR LIST	
RA140-22-BRG-CW-DW-42371 A1	1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	PIER(PE1) – REINFORCEMENT ARRANGEMENT 1/4	
RA140-22-BRG-CW-DW-42372 A1	1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	PIER(PE1) – REINFORCEMENT ARRANGEMENT 2/4	
RA140-22-BRG-CW-DW-42373 A1	1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	PIER(PE1) – REINFORCEMENT ARRANGEMENT 3/4	
RA140-22-BRG-CW-DW-42374 A1	1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	PIER(PE1) – REINFORCEMENT ARRANGEMENT 4/4	
RA140-22-BRG-CW-BS-42380 A1	1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	PIER(PE1) – BAR LIST	
RA140-22-BRG-CW-DW-42381 A1	1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	PIER(PE2) – REINFORCEMENT ARRANGEMENT 1/4	
RA140-22-BRG-CW-DW-42382 A1	11	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	PIER(PE2) – REINFORCEMENT ARRANGEMENT 2/4	
RA140-22-BRG-CW-DW-42383 A1	1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	PIER(PE2) – REINFORCEMENT ARRANGEMENT 3/4	
RA140-22-BRG-CW-DW-42384 A1	<b>\1</b>	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	PIER(PE2) – REINFORCEMENT ARRANGEMENT 4/4	











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RA140-22-BRG-CW-BS-42390	A1	14/09/15	SUBIYAH EMBANKMENT & INTERCHANGE BRIDGE	SUBSTRUCTURE OF IC BRIDGE	PIER(PE2) – BAR LIST	İ
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### Finishing Works

#### **Pavements**

Pavement materials are according to MPW General Specifications for Kuwait Motorway/Expressway system, August 2004. (Refer DOC III.1)

#### Structural Steel

For Railing, Barriers, Sign Gantries, Traffic Signs, Light Posts and Security Fence see structural steel for bridge structures.

### **Durability Strategy**

Reinforcing Steel	Member		Exposure Description	minimum cover to any steel (mm)
	Foundation	Pile below casing tip	SUB-C	100
	roundation	Pile above casing tip	SUB-C	100
		Pile cap	SUB-B	100
Ordinary Carbon	Abutment	Contact with soil	SUB-C	100
Steel		Exposure face	SUP	50
		Approach slab	SUP	50
	Deck	Top of deck	SUP	70
	Deck	Exterior	SUP	60

#### References

AASHTO (2007) "LRFD Bridge Design Specifications" 4th Edition.

STATE OF KUWAIT MINISTRY OF PUBLIC WORKS "Sheikh Jaber Al-Ahmad Al-Sabah Causeway Project Main Link

- Contract RA/140" Design Basis Bridges, Report No.: RA140-10-BRG-CW-TR-00814

STATE OF KUWAIT MINISTRY OF PUBLIC WORKS "Design, Build, Completion and Maintain Sheikh Jaber Al Ahmed Al Sabah Causeway Project (Main Link) - Tender No.RA140 Roads Administration - Volume (III): Technical Conditions - Document III.3: Design Criteria"

A1	14/09/15	First Issue	SKJ	swĸ	DKK				
REV.	REV. DATE DESCRIPTION OF REVISION DRAWN CHEC. APPRO.								
EMF	EMPLOYER								

STATE OF KUWAIT

MINISTRY OF PUBLIC WORKS ROADS ADMINISTRATION

PROJECT TITLE

SHEIKH JABER AL AHMAD AL SABAH CAUSEWAY PROJECT (MAIN LINK) CONTRACT RA/140

DSÛBÎŶAHTEMBANKMENT & INTERCHANGE BRIDGES SUBSTRUCTURE OF IC BRIDGE GENERAL NOTE

SCALE	DRAWN	DESIGNED	CHECKED	APPROVED
NONE	SKJ	swk	swk	DKK
DATE ISSUED				
14/09/15	14/09/15	14/09/15	14/09/15	14/09/15
CONTRACTOR				



DESIGNER



RA140-22-BRG-CW-DW-42201 A1

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